WILLIAMS

SUPERIOR DROP-FORGINGS

SUPERIOR DROP-FORGED TOOLS

TWENTIETH EDITION

J·H·WILLIAMS & CO·

Important Notice!

This 20th Edition Catalog includes the following New Goods and describes the New Finishes of Williams' Superior Drop-Forged Wrenches—

THE "SUPERRENCH"

(Chrome-Molybdenum)

In Five Patterns, pages 9 to 31

All Guaranteed Against Breakage

"VULCAN"
CHAIN PIPE TONGS

New Sizes, Nos. 15½ and 115½, pages 109-111

LIGHT SERVICE "C"
CLAMPS

New Design, deeper throat, page 150

WRENCH FINISHES

Pages 38-39

New FINISHED Wrenches (black enameled—baked on) at the old *Semi*-finished price are the greatest value ever offered as a standard line.

New UNFINISHED Wrenches are *hardened* and provide "Maximum utility with minimum finish".

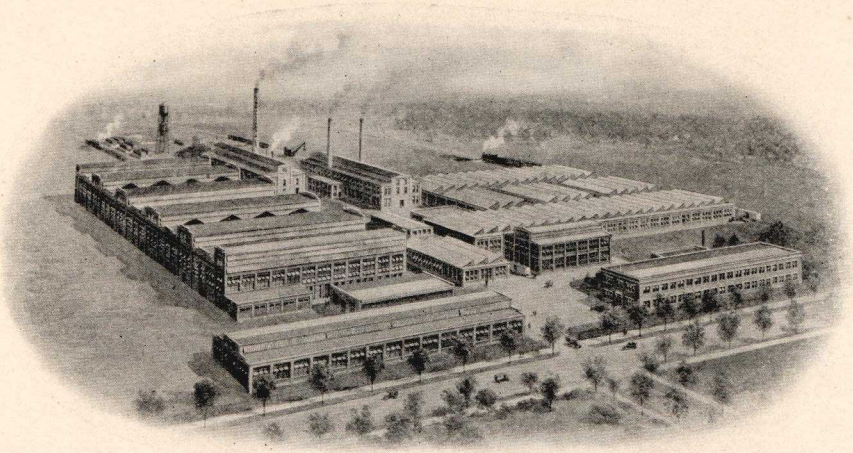
J. H. WILLIAMS & CO.

"The Wrench People"

Duplicates of this Catalog, Pocket Size, on request

A-16-12-26

1927
$45.00



WORKS, WAREHOUSE AND GENERAL OFFICES—BUFFALO, N. Y.

SUPERIOR DROP-FORGINGS AND DROP-FORGED TOOLS

WILLIAMS

"SUPERRENCH"

"VULCAN" W "FALCON"

"AGRIPPA"

TWENTIETH EDITION

J. H. WILLIAMS & CO.

ESTABLISHED 1882—INCORPORATED JULY 1, 1895

GENERAL OFFICES: BUFFALO, NEW YORK
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WILLIAMS
SUPERIOR DROP-FORGED TOOLS

Twentieth Edition

This catalog supersedes all previous issues, which are hereby withdrawn. Prices are subject to change without notice.

Heat-treating, Annealing, Tempering and Case-hardening Done to Order

We have ample facilities for handling work of this class and solicit inquiries therefor.

Chemical Analyses and Physical Tests

Our laboratories are thoroughly equipped and we offer their services for such analyzing as may be required.

Electric Welding

We are prepared to electric-weld rounds up to and including one inch diameter, and by this means can supply several of our stock specialties, such as Rod Ends, with shanks of any reasonable length.

Estimates for Special Forgings

Furnished on receipt of model or drawing and specifications, including quantity required.

Dies for Special Forgings

When charges are made for dies they include only a portion of their cost and we can not sell or part with the tools; we assume the risk and expense of their breakage, repair and maintenance and charge, if at all, only for their use. Tools, inactive for three years after date of last order, may be discarded, at our option, without further notice; if kept longer without use, storage charges may be incurred.

Changes

In the interest of simplicity, economy and convenience, our Carbon Steel Wrenches are now listed in but two standard conditions instead of three as formerly—see page 39.

The Single and Double Head Engineers' lines have been altered. In many cases the thickness of heads and length of handle have been increased. The Tappet line has been redesigned and extended.

The assortments of Wrenches carried by "Silent Salesman" boards A, D and L are entirely new.

List prices of Adjustable Hook Spanners, page 63, have been reduced.

Our "Light Service" C Clamps have been redesigned with deeper throat and greater clearance.

Eliminations

The following Wrench lines heretofore shown in our catalog have been discontinued:—Heavy Cap Screw with square base openings, Flat Handle "S" with square base openings, all Concave Handle "S", Triple Head, all Track Wrenches and Locomotive Tools. Also Yoke Ends, Machine Keys, Collars, Thumb Screws Styles H and J, Ammonia Flanges and Ferrules.

In addition we have marked with an asterisk (*) a number of slow-selling Wrenches

to be eliminated when the present stock runs out. See Substitution List for Eliminated Sizes, pages 34 to 37.

Additions

The "Superrench" (Chrome-Molybdenum Steel) in Engineers', General Service, Tappet, Construction and Structural patterns, 6 "Silent Salesman" display boards for "Superrenches" and 6 "Superrench" Sets.

For Carbon Steel Wrenches, 2 new "Silent Salesman" boards Nos. 83 and 86 (Tappet Wrenches) and 2 new Sets Nos. 25 and 63.

In Chain Pipe Tongs—"Vulcan" No. 15 1/2 and "Vulcan" Back-Up No. 115 1/2.

Proposed Tentative American Standard Bolts and Nuts

As is generally known, the Engineering Societies and representatives of the Government, the industry and consumers have been working for several years to develop a simplified formula for Wrench-Head Bolts, Nuts, etc. It is expected this Proposed American Standard will shortly be formally approved. If and when it is adopted, our wrenches will be made to conform thereto and full data of wrench sizes for individual Bolts, Nuts, etc. will be available.

Cuts Illustrating Our Goods

Are furnished for customers' use; if desired we will prepare matter for printer and correct proof.

Dimensions

Unless otherwise stated, all dimensions are in inches.

Guarantee

We guarantee all our product, whether Standard Stock goods, as described in this catalog, or Special Forgings made to order, to be free from imperfections of workmanship and material. We will gladly replace, without charge, any which prove defective, but we can not allow claims for labor or damages.

Cable Address, "Willrich, New York"

Codes used: Western Union, Lieber's Standard, Lieber's 5 Letter, Bentley's and "A B C," Fifth Edition.

We are sole makers of the following brands
of drop-forged specialties:

"SUPERRENCH"

"VULCAN" **"FALCON"**

"AGRIPPA"

We were first to establish a uniform line of fifteen-degree angle Wrenches, since generally adopted.

Duplicates of this Catalog will be furnished on request.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

NUMERICAL INDEX
OF
STANDARD DROP-FORGED WRENCHES

For the convenience of customers we include this numerical index of Standard Wrenches, affording a double means of locating herein a given wrench, or establishing identities when numbers only are given on invoices.

THE "SUPERRENCH"
(*Chrome-Molybdenum*)

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SUPERIOR DROP-FORGED TOOLS

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WILLIAMS
SUPERIOR DROP-FORGED TOOLS

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WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SUPERRENCH"
(Chrome-Molybdenum)
WRENCHES

FOR many years, Wrenches, like other tools, were made of Carbon Steel, the best material then available. But, with the advent of the automobile, came the insistent demand for stronger, tougher materials that led to the development of Alloy Steels of various grades. Their use permits a refinement in design and a decrease in weight of parts, impossible of attainment in the case of Carbon Steel.

Taking advantage of our experience gained in making to order special forgings of many kinds of Alloy Steel, we have added to our Superior Drop-Forged Wrenches of Carbon Steel a line that is the last word in these tools—THE "SUPERRENCH".

After exhaustive tests, Chrome-Molybdenum Steel was selected as providing the strongest, toughest and most desirable material for the purpose ever produced. Wrenches made from it, though of lighter weight, thinner section, greater length and with narrower jaws than Carbon Steel Wrenches with corresponding openings, are far stronger than the latter. The "Superrench" is absolutely break-proof—no matter how small the size, or how hard the work.

Routine or extraordinary jobs, "Superrenches" handle all. Their thin heads and pointed jaws get in and grip where no clumsy wrench *could* go. Where clearance is limited, a man needs a tool that's a help—not a hindrance. And in any situation, he wants a wrench on which he can pull his last ounce, if necessary, and know the tool will take all he can give it. That's The "Superrench".

Every "SUPERRENCH" is Guaranteed Against Breakage

WILLIAMS

SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(*Chrome-Molybdenum*)

ENGINEERS' WRENCHES

15° Angle, Double Head

Guarantee

Engineers' "SUPERRENCHES" will strip the thread of any standard nut, or break the bolt before spreading the jaws. Furthermore they will not break. Any returned to us that do not meet these claims will be immediately replaced.

(Continued on opposite page)

No.	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diameter Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE, Nickel-Finished
1721	1/8	1/8 & 3/16		5/16 & 3/8	4 1/4	13/64	$ .80
1021	1/8 & 3/16	1/8		5/16 & 13/32			
1722	1/8	1/8 & 1/4	1/4	5/16 & 7/16			
1723		3/16 & 1/4	1/4	3/8 & 7/16			
1022	1/8 & 1/4	1/8 & 5/16	5/16	5/16 & 1/2	4 3/4	7/32	.96
1023	3/16 & 1/4	5/16	5/16	13/32 & 1/2			
1723A	1/4	3/16 & 5/16	5/16	3/8 & 1/2			
1024	3/16 & 5/16			13/32 & 19/32	5 1/2	1/4	1.16
1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2			
1725A		1/4 & 3/8	1/4 & 3/8	7/16 & 9/16			
1725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16			
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32			
1726	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8	6 1/2	9/32	1.40
1026	1/4 & 3/8	5/16	5/16	1/2 & 11/16			
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8			
1027	5/16 & 3/8			19/32 & 11/16			
1027C	3/8	3/8	3/8	9/16 & 11/16			
1728		3/8 & 1/2	3/8 & 1/2	9/16 & 3/4	7 3/4	5/16	1.74
1028	5/16 & 7/16			19/32 & 25/32			
1028S	7/16	7/16	7/16	5/8 & 25/32			

Weights given page 181.

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)

ENGINEERS' WRENCHES

15° Angle, Double Head

(*Continued*)

"SUPERRENCH" Wrenches, Engineers' Pattern, are particularly serviceable in close, cramped quarters where clearance is limited. Their heads are thinner and their pointed jaws narrower than carbon steel wrenches with the same openings. Their generous length is ample for efficient service.

Furnished heat-treated and Nickel-Finished, with heads buffed bright.

For Whitworth Standard and Metric Measure, see page 180.

Every "Superrench" is Guaranteed Against Breakage

No.	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diameter Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE, Nickel-Finished
1729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7 3/4	5/16	$ 1.74
1029	3/8 & 7/16			11/16 & 25/32			
1030	3/8 & 1/2	5/8	9/16	11/16 & 7/8			
1731		1/2 & 9/16	1/2	3/4 & 13/16	9 1/4	3/8	2.14
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8			
1031	7/16 & 1/2	5/8	9/16	25/32 & 7/8			
1731B	1/2	9/16 & 5/8	9/16	13/16 & 7/8	9 1/4	3/8	2.14
1032	7/16 & 9/16			25/32 & 31/32			
1033A	1/2	5/8	9/16 & 5/8	7/8 & 15/16			
1033	1/2 & 9/16	5/8	9/16	7/8 & 31/32			
1733	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/4	7/16	2.64
1033C		3/4	5/8 & 11/16	15/16 & 1			
1034	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16			
1734	1/2	5/8 & 7/8	9/16	7/8 & 1 1/8			
1035	9/16 & 5/8		3/4	31/32 & 1 1/16			
1735		3/4 & 7/8	11/16	1 & 1 1/8	12 1/4	1/2	3.18
1036	9/16 & 3/4	1	7/8	31/32 & 1 1/4			
1736	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4			
1037	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4			
1737	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4			

Weights given page 181.

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)

CONSTRUCTION WRENCHES

15° Angle

The use of Chrome-Molybdenum Steel provides great increase in the strength and toughness of these wrenches, compared with those of carbon steel. They are absolutely dependable and assure safety in operation to structural workers.

The tang is for bringing bolt holes into line and for insertion into convenient openings when wrench is not in use.

Furnished heat-treated and Nickel-Finished. The heads are not buffed bright as this operation adds needless expense to tools used largely in outdoor work.

For Whitworth Standard and Metric Measure, see page 180.

Every "SUPERRENCH" is Guaranteed Against Breakage

No.	For U. S. Std. Nut; Size Bolt	Opening Milled	Extreme Length Approx.	Thickness Head	PRICE, Nickel-Finished	No.
1203	3/8	11/16	9 1/2	7/16	$ 2.00	1203
1205	1/2	7/8	11	1/2	2.60	1205
1207	5/8	1 1/16	13	9/16	3.60	1207
1208	3/4	1 1/4	15	5/8	4.90	1208
1209	7/8	1 7/16	17	11/16	6.75	1209
1210	1	1 5/8	19	3/4	9.50	1210

Weights given page 181.

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)
STRUCTURAL WRENCHES
Straight Opening

The use of Chrome-Molybdenum Steel provides great increase in the strength and toughness of these wrenches, compared with those of carbon steel. They are absolutely dependable and assure safety in operation to structural workers.

The tang is for bringing bolt holes into line and for insertion into convenient openings when wrench is not in use.

The offset handle provides for clearance of obstructions and safety for operator's hands.

Furnished heat-treated and Nickel-Finished. The heads are not buffed bright as this operation adds needless expense to tools used largely in outdoor work.

For Whitworth Standard and Metric Measure, see page 180.

Every "SUPERRENCH" is Guaranteed Against Breakage

No.	For U. S. Std. Nut; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	Handle Offset	PRICE, Nickel-Finished	No.
1903	3/8	23/32	9 1/2	7/16	7/8	$ 2.35	1903
1905	1/2	29/32	11	1/2	1	3.15	1905
1907	5/8	1 7/64	13	9/16	1 1/8	4.40	1907
1908	3/4	1 19/64	15	5/8	1 1/4	6.00	1908
1909	7/8	1 1/2	17	11/16	1 5/16	8.15	1909
1910	1	1 11/16	19	3/4	1 3/8	11.35	1910

Weights given page 181.

*REGISTERED TRADE MARK

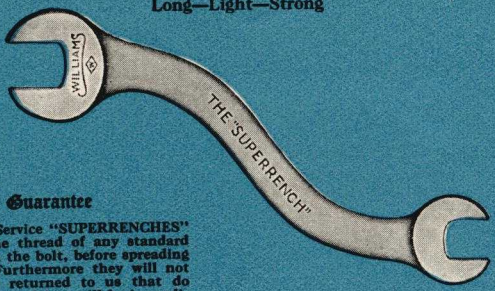
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

GENERAL SERVICE WRENCHES

22 1/2° Angle, Double Head

Long—Light—Strong



Guarantee

General Service "SUPERRENCHES" will strip the thread of any standard nut or break the bolt, before spreading the jaws. Furthermore they will not break. Any returned to us that do not meet these claims will be immediately replaced.

Furnished heat-treated and Nickel-Finished; heads buffed bright.

For Whitworth Standard and Metric Measure, see page 180.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diameter Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE, Nickel-Finished
1075B		3/16 & 1/4	1/4	3/8 & 7/16	6 1/4	1/4	$ 1.30
1075A		3/16 & 5/16	5/16	3/8 & 1/2			
1075	3/16 & 1/4	5/16	5/16	13/32 & 1/2			
1077S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	7 1/4	9/32	1.65
1077B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16			
1077	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8			
1079B	5/16	3/8	3/8	9/16 & 19/32	8 1/4	5/16	2.05
1079S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8			
1079A	3/8	3/8	3/8	9/16 & 11/16			
1079	3/8	7/16	7/16	5/8 & 11/16			
1079C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4			
1081	3/8			11/16 & 27/32	9 1/4	3/8	2.50
1081B		1/2 & 9/16	1/2	3/4 & 13/16			
1081A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8			
1083			5/8	27/32 & 15/16	10 3/8	7/16	3.10
1083B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1			
1083A		3/4	5/8 & 11/16	15/16 & 1			
1085		3/4 & 7/8	11/16	1 & 1 1/8	12	1/2	3.90
1085C	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4			
1085B	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4			

Weights given page 181.

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)
TAPPET WRENCHES
15° Angle, Double Head

Long—Thin—Light—Strong

These extra long, thin Wrenches are specially designed for tappet adjustment; their length is ample to prevent burning the hands while working on tappets when the motor is hot (the only time for such service). The 15° angle of opening is unequalled in efficiency. It makes the same size opening in both heads of wrench unnecessary. Consequently, *each* "Superrench" serves *two* sizes of tappets.

Furnished heat-treated and Nickel-Finished; heads buffed bright.

Tappet Wrench Set described on page 29; "Silent Salesman", with chart of cars and trucks served, pages 24 to 28. For Whitworth Standard and Metric Measure, see page 180.

Every "SUPERRENCH" is Guaranteed Against Breakage

No.	Openings Milled	U. S. Standard Nuts; Size Bolts	S.A.E. Standard Nuts; Size Bolts	Extreme Length, Approx.	Thickness Heads	PRICE, Nickel-Finished
1090A	3/8 & 7/16		1/4			
1090B	13/32 & 1/2	3/16 & 1/4	5/16			
1090	7/16 & 1/2	1/4	1/4 & 5/16			
1090C	7/16 & 9/16		1/4 & 3/8	8	5/32	$ 2.20
1090F	1/2 & 17/32	1/4	5/16			
1090D	1/2 & 9/16	1/4	5/16 & 3/8			
1090E	1/2 & 19/32	1/4 & 5/16	5/16			
1092B	1/2 & 11/16	1/4 & 3/8	5/16			
1092	9/16 & 5/8		3/8 & 7/16	8	3/16	2.40
1092D	19/32 & 11/16	5/16 & 3/8				
1092F	5/8 & 11/16	3/8	7/16			
1094A	5/8 & 3/4		7/16 & 1/2			
1094B	19/32 & 25/32	5/16 & 7/16				
1094D	11/16 & 25/32	3/8 & 7/16		9	7/32	2.70
1094F	11/16 & 7/8	3/8 & 1/2	9/16			
1094G	3/4 & 13/16		1/2			
1094	3/4 & 7/8	1/2	1/2 & 9/16			
1096A	25/32 & 7/8	7/16 & 1/2	9/16			
1096B	25/32 & 31/32	7/16 & 9/16				
1096F	7/8 & 31/32	1/2 & 9/16	9/16	9	7/32	3.00
1096H	7/8 & 1 1/16	1/2 & 5/8	9/16 & 3/4			
1096	15/16 & 1		5/8 & 11/16			

Weights given page 181.

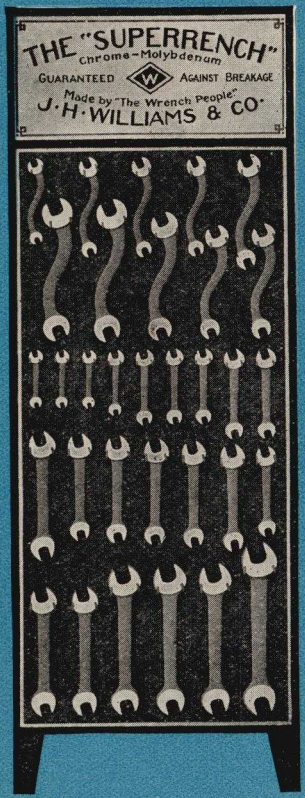
* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE M

AUTOMOTIVE AND MACHINE SHOP ASSORTMENT



Adds to your Salesforce,
But NOT to your Payroll.

No dealer can say to every customer "Need any wrenches"? But Williams' "Silent Salesman" *can*—and does. Two wrenches on a board, where they can be seen, sell faster than one in a drawer, or on the shelf.

This assortment of break-proof "SUPERRENCHES" has been carefully selected to provide, in the smallest number of wrenches, the greatest variety of sizes for all popular S. A. E. and U. S. Standard Nuts and Cap Screws.

Two styles of wrenches are included, offering attractive selections both in patterns and sizes.

"Silent Salesman" M is mounted as an easel and is self-supporting. Attachments are also provided so that it may be hung if desired. No charge for the Board to dealers who purchase the "Superrenches" it displays.

Every "SUPERRENCH" is Guaranteed Against Breakage

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE M

Size Board, 20 x 51 in.

Weight with 192 Wrenches (32 Sizes, 6 each) 125 lbs.

Every "SUPERRENCH" is Guaranteed Against Breakage

6 Each Size No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diameter Screws	For S. A. E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each Nickel-Finished
ENGINEERS' WRENCHES—15° Angle, DOUBLE HEAD							
1721	1/8	1/8 & 3/16		5/16 & 3/8	4 1/4	13/64	.80
1021	1/8 & 3/16	1/8		5/16 & 13/32			
1723		3/16 & 1/4	1/4	3/8 & 7/16	4 3/4	7/32	.96
1023	3/16 & 1/4	5/16	5/16	13/32 & 1/2			
1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5 1/2	1/4	1.16
1725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16			
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32			
1026	1/4 & 3/8	5/16	5/16	1/2 & 11/16	6 1/2	9/32	1.40
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8			
1027	5/16 & 3/8			19/32 & 11/16			
1728		3/8 & 1/2	3/8 & 1/2	9/16 & 3/4	7 3/4	5/16	1.74
1028	5/16 & 7/16			19/32 & 25/32			
1729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4			
1029	3/8 & 7/16			11/16 & 25/32			
1030	3/8 & 1/2	5/8	9/16	11/16 & 7/8			
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.14
1031	7/16 & 1/2	5/8	9/16	25/32 & 7/8			
1033	1/2 & 9/16	5/8	9/16	7/8 & 31/32			
1733	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/4	7/16	2.64
1034	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16			
1035	9/16 & 5/8		3/4	31/32 & 1 1/16			
1037	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12 1/4	1/2	3.18
GENERAL SERVICE "S" WRENCHES—22½° Angle, DOUBLE HEAD							
1075A		3/16 & 5/16	5/16	3/8 & 1/2	6 1/4	1/4	1.30
1077S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	7 1/4	9/32	1.65
1077B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16			
1077	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8			
1079S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	8 1/4	5/16	2.05
1079	3/8	7/16	7/16	5/8 & 11/16			
1079C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4			
1081A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.50
1083B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	3.10
1083A		3/4	5/8 & 11/16	15/16 & 1			

PRICE, Complete Wrench Assortment "M"..... $ 350.16

* REGISTERED TRADE MARK

WILLIAMS

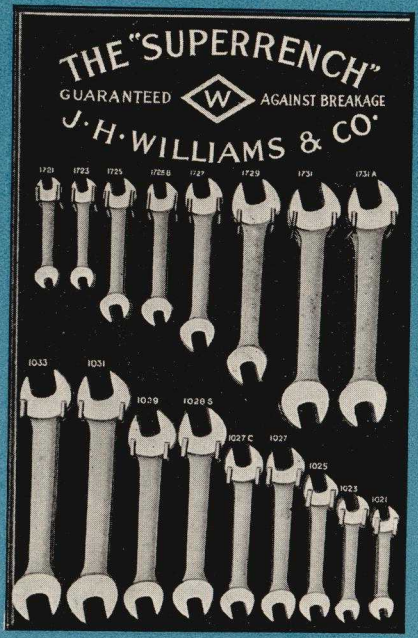
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE MJ

GENERAL ASSORTMENT



Every "SUPERRENCH" is Guaranteed Against Breakage

Adds to your Salesforce, but NOT to your Payroll

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)

"SILENT SALESMAN"—STYLE MJ

GENERAL ASSORTMENT

Size Board, 15 x 24 in. Weight with 102 Wrenches, 44 1/2 lbs.

An assortment of "Superrenches" for U. S. and S. A. E. Standard Nuts and Cap Screws, covering all popular sizes.

"Superrenches" have thin heads with narrow pointed jaws—no bulk to interfere when clearance is limited. They're absolutely break-proof; no matter how small the size—no matter how hard the work.

Furnished heat-treated and Nickel-Finished, with heads buffed bright.

No charge for the Board, to purchasers taking the assortment of "Superrenches" it displays.

Every "SUPERRENCH" is Guaranteed Against Breakage

6 Each Size, No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diameter Screws	For S. A. E. Std. Nuts and Cap Screws; Diam. Screws	Openings Milled	Extreme Length Approx.	Thickness Heads	PRICE Each, Nickel-Finished
1721	1/8	1/8 & 3/16		5/16 & 3/8	4 1/4	13/64	$ .80
1021	1/8 & 3/16	1/8		5/16 & 13/32			
1723		3/16 & 1/4	1/4	3/8 & 7/16			
1023	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 3/4	7/32	.96
1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5 1/2	1/4	1.16
1725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16			
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32			
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6 1/2	9/32	1.40
1027	5/16 & 3/8			19/32 & 11/16			
1027C	3/8	3/8	3/8	9/16 & 11/16			
1028S	7/16	7/16	7/16	5/8 & 25/32	7 3/4	5/16	1.74
1729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4			
1029	3/8 & 7/16			11/16 & 25/32			
1731		1/2 & 9/16	1/2	3/4 & 13/16	9 1/4	3/8	2.14
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8			
1031	7/16 & 1/2	5/8	9/16	25/32 & 7/8			
1033	1/2 & 9/16	5/8	9/16	7/8 & 31/32			

PRICE, Complete Wrench Assortment "MJ"..... $ 148.92

* REGISTERED TRADE MARK

WILLIAMS

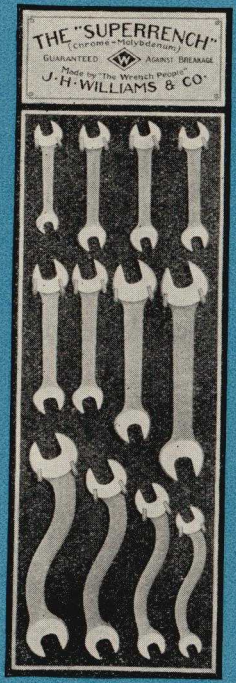
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE ME

GENERAL ASSORTMENT



Every "SUPERRENCH" is Guaranteed Against Breakage

Adds to your Salesforce, but NOT to your Payroll

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE ME

GENERAL ASSORTMENT

Size Board, 8 1/2 x 28 in. Weight with 36 Wrenches, 14 lbs.

The sizes included in this assortment are generally required for Farm, Machine and Automotive purposes: 12 sizes of Double Head Wrenches in 2 patterns, with openings milled for popular U. S. and S. A. E. Nuts and Cap Screws.

"Superrenches" have thin heads with narrow, pointed jaws—no bulk to interfere when clearance is limited. They're absolutely break-proof, no matter how small the size—no matter how hard the work.

Furnished heat-treated and Nickel-Finished, with heads buffed bright.

No charge for the Board to purchasers taking the assortment of "Superrenches" it displays.

Every "SUPERRENCH" is Guaranteed Against Breakage

3 Each Size, No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Dia. Screws	For S. A. E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Nickel-Finished
ENGINEERS' WRENCHES—15° Angle							
1023	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 3/4	7/32	$ .96
1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5 1/2	1/4	1.16
1725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	1/4	1.16
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	1/4	1.16
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6 1/2	9/32	1.40
1027	5/16 & 3/8			19/32 & 11/16	6 1/2	9/32	1.40
1029	3/8 & 7/16			11/16 & 25/32	7 3/4	5/16	1.74
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.14
GENERAL SERVICE "S" WRENCHES—22½° Angle							
1075B		3/16 & 1/4		3/8 & 7/16	6 1/4	1/4	$ 1.30
1077B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	1.65
1079C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	2.05
1081A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.50

PRICE, Complete Wrench Assortment "ME"..... $ 55.86

*REGISTERED TRADE MARK

WILLIAMS

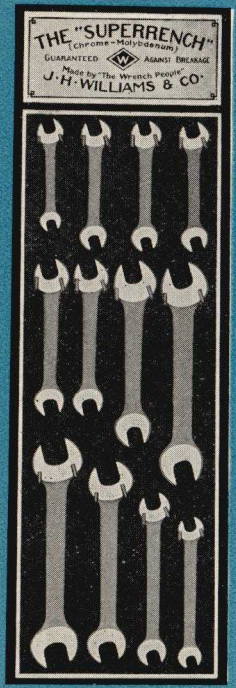
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(*Chrome-Molybdenum*)

"SILENT SALESMAN" STYLE MH

AUTOMOTIVE ASSORTMENT



Every "SUPERRENCH" is Guaranteed Against Breakage

Adds to your Salesforce, but NOT to your Payroll

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

"SILENT SALESMAN"—STYLE MH

AUTOMOTIVE ASSORTMENT

Size Board, 8 1/2 x 28 in. Weight with 36 Wrenches, 12 1/2 lbs.

This board contains 12 sizes of Wrenches with openings milled for popular U. S. and S. A. E. Standard Nuts and Cap Screws. They cover general automotive requirements, including tappet adjustment.

"Superrenches" have thin heads with narrow, pointed jaws—no bulk to interfere when clearance is limited. They're absolutely break-proof, no matter how small the size—no matter how hard the work.

Furnished heat-treated and Nickel-Finished, with heads buffed bright.

No charge for the Board to purchasers taking the assortment of "Superrenches" it displays.

Every "SUPERRENCH" is Guaranteed Against Breakage

3 Each Size, No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diameter Screws	For S. A. E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length	Thickness Heads	PRICE Each Nickel-Finished
ENGINEERS' WRENCHES—15° Angle, Double Head							
1023	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 3/4	7/32	$ .96
1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5 1/2	1/4	1.16
1725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	1/4	1.16
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	1/4	1.16
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6 1/2	9/32	1.40
1027	5/16 & 3/8			19/32 & 11/16	6 1/2	9/32	1.40
1029	3/8 & 7/16			11/16 & 25/32	7 3/4	5/16	1.74
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.14
TAPPET WRENCHES—15° Angle, Double Head							
1090D	1/4		5/16 & 3/8	1/2 & 9/16	8	5/32	$ 2.20
1092F	3/8		7/16	5/8 & 11/16	8	3/16	2.40
1094	1/2		1/2 & 9/16	3/4 & 7/8	9	7/32	2.70
1096			5/8 & 11/16	15/16 & 1	9	7/32	3.00

PRICE, Complete Wrench Assortment "MH"..... $ 64.26

* REGISTERED TRADE MARK

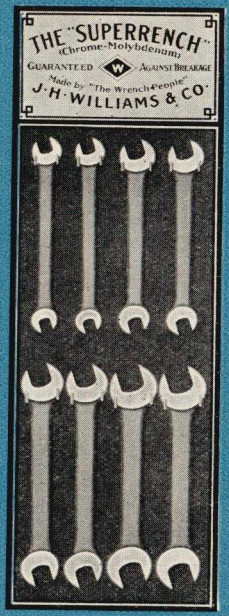
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)

"SILENT SALESMEN" Nos. 1083 AND 1086

Adds to your Salesforce,
but NOT to your Payroll

COMPLETE TAPPET ASSORTMENT



Every "SUPERRENCH" is
Guaranteed Against Breakage

For Cars and Trucks served by these Wrenches, see Chart pages 26 to 28.

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

"SILENT SALESMEN" Nos. 1083 AND 1086

Adds to your Salesforce,
but NOT to your Payroll

COMPLETE TAPPET ASSORTMENT

Size Board, 8 1/2 x 28 in.

No. 1083—24 Wrenches in 8 Sizes, 3 of Each—Weight 15 Lbs.
No. 1086—48 Wrenches in 8 Sizes, 6 of Each—Weight 23 Lbs.

These assortments of carefully selected combinations of openings offer the most complete garage service in the smallest number of Wrench sizes obtainable. They cover every size Tappet from 7/16 to 1-1/16" and will care for all prominent cars and trucks; see chart, pages 26 to 28.

Furnished heat-treated and Nickel-finished; heads buffed bright

No charge for the Board to purchasers taking either assortment of Wrenches specified.

"Silent Salesman" No. 1083 carries the same assortment as No. 1086 in table below, but with only 3 instead of 6 Wrenches of each size.

Every "SUPERRENCH" is Guaranteed Against Breakage

Board 1086 — 6 Each Size, No.	Openings Milled	U. S. Standard Nuts; Size Bolts	S.A.E. Standard Nuts; Size Bolts	Extreme Length, Approx.	Thickness Heads	PRICE Each, Nickel-Finished
1090	7/16 & 1/2	1/4	1/4 & 5/16	8	5/32	$ 2.20
1090D	1/2 & 9/16	1/4	5/16 & 3/8	8	5/32	2.20
1092	9/16 & 5/8		3/8 & 7/16	8	3/16	2.40
1092D	19/32 & 11/16	5/16 & 3/8		8	3/16	2.40
1094A	5/8 & 3/4		7/16 & 1/2	9	7/32	2.70
1094G	3/4 & 13/16		1/2	9	7/32	2.70
1096	15/16 & 1		5/8 & 11/16	9	7/32	3.00
1096H	7/8 & 1 1/16	1/2 & 5/8	9/16 & 3/4	9	7/32	3.00
No. 1086 Assortment Complete—6 Wrenches each size						$123.60
No. 1083 Assortment Complete—3 Wrenches each size						$ 61.80

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

TAPPET WRENCH CHART

The following table gives the Wrench Numbers and quantity on each required for adjusting valve tappets in the cars and trucks named.

PASSENGER CARS

Ajax; (1) 1092D, (2) 1090D
Apperson—6, 8; (1 ea.) 1090, 1090D, 1092
Auburn—4-44, 6-66, 8-88; (1 ea.) 1090, 1090D, 1092
Buick; (2) 1090
Cadillac—51, 59, 61, 63, 314; (1) 1090D
Case—Y, JIC; (1 ea.) 1092, 1092D, 1094G
Chandler; (1 ea.) 1094A, 1096
Chevrolet; (1 ea.) 1094A, 1096H
Chrysler—6; (1) 1090D, (2) 1090
Chrysler—4; (1) 1090D, (2) 1090
Cleveland; (1 ea.) 1094A, 1096
Cunningham; (2) 1090D
Dagmar—6-60; (1 ea.) 1090, 1090D, 1092
Dagmar—6-70; (1 ea.) 1092, 1092D, 1094G
Davis—93; (1 ea.) 1090D, 1092D
Diana; (1 ea.) 1090, 1090D, 1092D
Dodge; (3) 1090
Dorris; (1) 1090D
Du Pont—D; (1 ea.) 1090, 1090D
Durant—4 and 6; (1) 1090D
Elcar—4-55, 6-65, 8-81; (1 ea.) 1090, 1090D, 1092
Essex; (2) 1090
Flint—B40, B60; (1 ea.) 1090, 1090D, 1092D
Flint—E55, E80; (1 ea.) 1092, 1092D, 1094G
Gardner; (1 ea.) 1090, 1090D, 1092
Gray; (3) 1090
Hall Scott—HS; (2) 1090
Hall Scott—LM; (1) 1092
Hertz—D1; (1 ea.) 1090, 1090D, 1092D
H.C.S. Cab; (1 ea.) 1090, 1090D
Hudson; (2) 1090D
Hupp—A; (1) 1092D, (2) 1094A
Hupp—E; (2) 1090
Hupp—R; (3) 1090D
Jewett—6-40, 6-45; (1 ea.) 1092, 1092D
Jewett—23-25; (1) 1094A, (2) 1092
Jordan—A; (1 ea.) 1092, 1092D, 1094G
Jordan—J; (1) 1090, (2) 1092D
Kissel; (1 ea.) 1090, 1090D, 1092
Locomobile—Jr. 8; (1) 1092
Locomobile—48 and 90; (1 ea.) 1092, 1094A
Lincoln; (2) 1090
Marmon; (2) 1092D
Maxwell; (1) 1090D, (2) 1090
Mercer—4; (2) 1090D
Mercer—6; (2) 1090
Mitchell; (1 ea.) 1090, 1090D, 1092D
Moon—A; (1 ea.) 1090D, 1092D
Moon—8; (1 ea.) 1090, 1090D, 1092D
McFarlan—SV; (1 ea.) 1090, 1090D
McFarlan—TV; (1 ea.) 1092D, 1096H
McFarlan—St. 8; (1 ea.) 1090, 1090D, 1092
Nash—Adv. 261, Spcl. 231; (1) 1090
Oakland; (1) 1090, (2) 1090D
Oldsmobile; (1 ea.) 1090D, 1092
Overland—4; (3) 1090
Overland—6; (1) 1090, (2) 1090D
Packard—6; (3) 1090D
Packard—8; (3) 1090D
Paige—6-72; (2) 1092, (1) 1094A
Peerless—6-72; (1 ea.) 1096H, 1096
Peerless—6-80; (1 ea.) 1090, 1090D, 1092D
Pierce Arrow—80 Lt. 6; (1 ea.) 1090D, 1096H
Pierce Arrow—33 Big 6; (1 ea.) 1092D, 1096H
Pontiac; (1) 1090, (2) 1090D
Premier; (1 ea.) 1092, 1094A
Reo—6 cyl.; (1 ea.) 1090D, 1092D
Rickenbacker; (3) 1090D
Roamer—6-50-55; (1 ea.) 1090D, 1092D
Roamer—6-54E; (2) 1092, (1) 1092D
Roamer—8-88; (1 ea.) 1090, 1090D, 1092
Rolls-Royce; (2) 1092
Star—4, 6; (1 ea.) 1090D, 1092D
Studebaker—Std. 6; (2) 1090
Studebaker—Spcl. 6, Big 6; (1 ea.) 1090, 1090F, 1092D
Velie; (1) 1090
Wills Sainte Claire—A, B, C, D-68, T6, W6; (2) 1090

(Continued on following page)

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

TAPPET WRENCH CHART

TRUCKS

Ace—WU; (3) 1090D
Ace—EBU, HU; (1) 1092, (2) 1094A
Acorn; (1) 1092, (2) 1094A
Acorn—4; (1) 1094A, (2) 1096
American; (1 ea.) 1092, 1092D, 1094G
Amer. La France—2R, 3R, 5R, 65E; (2) 1096H
Amer. La France—10E, 12E, 38E; (1) 1094A, (2) 1096
Amer. La France—19E; (3) 1096
Armleder—K4; (1 ea.) 1092, 1092D, 1094G
Armleder—YBUI; (1) 1094A, (2) 1096
Atlas—J4; (1 ea.) 1092, 1092D, 1094G
Atterbury—B7; (1 ea.) 1092, 1092D, 1096
Atterbury—K4, L4; (1 ea.) 1092, 1092D, 1094G
Atterbury—KTU; (1) 1092, (2) 1094A
Beggs; (1 ea.) 1092, 1092D, 1094G
Bessemer—J4, K4; (1 ea.) 1092, 1092D, 1094G
Bethlehem—S4, SR; (3) 1090
Betz; (1) 1092, (2) 1094A
Biederman—7W; (1) 1090, (2) 1090D
Biederman—8R, 6B, 14H; (1 ea.) 1092, 1092D, 1094G
Bridgeport—HU, HTU, WTU, YU; (3) 1090D
Bridgeport—FTU; (1) 1092, (2) 1094A
Bridgeport—YTU; (1) 1094A, (2) 1096
Brockway—B7; (1 ea.) 1092, 1092D, 1096
Brockway—Wis. Eng; (1) 1090D
Brockway—K4, L7, 6B, 14H; (1 ea.) 1092, 1092D, 1094G
Chevrolet; (1 ea.) 1094A, 1096H
Chicago—OX; (3) 1090D
Commerce—7U; (1 ea.) 1090D, 1092D
Commerce—4K, 6B, 14H; (1 ea.) 1092, 1092D, 1094G
Dart—WTU; (3) 1090D
Dart—EBU; (1) 1092, (2) 1094A
Day-Elder—WTU; (3) 1090D
Day-Elder—KBU, EBU; (1 ea.) 1092, 1094A
Day-Elder—YBU, BTU, BUS; (1) 1094A, (2) 1096
Day-Elder—Cont. 6B; (1 ea.) 1092, 1092D, 1094G
DeMartini—1 1/2 Ton; (1) 1092. (2) 1094A
DeMartini—2 Ton; (3) 1090D
DeMartini—4 and 5 Ton; (1) 1094A, (2) 1096
Denby—Herc. O; (3) 1090
Denby—Cont. J4, K4, L4; (1 ea.) 1092, 1092D, 1094G
Diamond—T-Herc. O; (3) 1090
Dodge; (2) 1090
Duer—K4; (1 ea.) 1092, 1092D, 1094G
Duplex—H. A. 400; (1 ea.) 1096, 1096H
Duplex—TU; (3) 1090D
Duplex—WTU ; (1) 1092 (2) 1094A
Dupont; (1 ea.) 1090, 1090D
Elcar; (1 ea.) 1090, 1090D, 1092
Federal; (1 ea.) 1092, 1092D, 1094G
Four Wheel Drive; (2) 1090
Front Drive—CTU; (1) 1092, (2) 1094A
Garford—MU, KTU, EBUI; (1) 1092, (2) 1094A
Garford—BTU; (1) 1094A, (2) 1096
Garford—Wis. Y, Z; (1) 1090D
Gotfredson—WTU; (1) 1092, (2) 1094A
Gotfredson — BUS, YBUI, BTU; (1) 1094A, (2) 1096
Graham; (2) 1090
Gramm—CT, C4; (1 ea.) 1090, 1090D, 1092
Gramm—K4, L4; (1 ea.) 1092, 1092D, 1094G
Gramm—B5; (1 ea.) 1092, 1092D, 1096
Grass-Premier—1 1/2 to 2 1/2 Ton, LYC "C" (1 ea.) 1090, 1090D, 1092
Grass-Premier—1 1/2 and 2 Ton, Wauk. "Y"; (1 ea.) 1090, 1090D
Hahn—O, OX; (3) 1090
Hahn—B5, K4, L4, 6B, 14H; (1 ea.) 1092, 1092D, 1094G
Hahn—N, C4; (1) 1092, (2) 1092D
Hahn—E4; (1 ea.) 1094A, 1096, 1096H
Hall—Cont. C4; (1) 1092, (2) 1092D
Harvey; (1) 1094A, (2) 1096
Hawkeye—YBUI; (1) 1094A, (2) 1096
Hawkeye—WTU; (1) 1092, (2) 1094A
Hoover; (1) 1092D, (2) 1092
Hug; (1) 1092, (2) 1094A
Indiana; (1 ea.) 1092, 1094A, 1096H
Intnl. Harvester; (1 ea.) 1090, 1090D, 1092
Intnl. Motor; (2) 1096H
Kelly-Spgfld.—Herc. OX; (3) 1090

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(*Chrome-Molybdenum*)

TAPPET WRENCH CHART

TRUCKS

Kelly-Spgfld.—Cont. K4, L4; (1 ea.) 1092, 1092D, 1094G
Kelly-Spgfld.—K40, KS50, KS70; (2) 1092
Kenworth—O, M; (1) 1092, (2) 1094A
Kenworth—KS, L, RS, E, F; (1) 1094A, (2) 1096
Kissel—1, 1 1/2, 2 1/2 Ton; (1 ea.) 1090, 1090D, 1092
Kissel—5 ton; (1) 1094A, (2) 1096
Kleiber—E4; (1 ea.) 1094A, 1096, 1096H
Kleiber—B5; (1 ea.) 1092, 1092D, 1096
Kleiber—J4, K4, L4; (1 ea.) 1092, 1092D, 1094G
K-Z—B-5; (1 ea.) 1092, 1092D, 1096
K-Z—K4, L4, 6M; (1 ea.) 1092, 1092D, 1094G
Lange; (1 ea.) 1092, 1092D, 1094G
Larrabee-Deyo—B5; (1 ea.) 1092, 1092D, 1096
Larrabee—7U; (1 ea.) 1090D, 1092D
Larrabee-Deyo—8R, 6B, L4; (1 ea.) 1092, 1092D, 1094G
Le Moon—B5; (1 ea.) 1092, 1092D, 1096
Le Moon—K4, L4; (1 ea.) 1092, 1092D, 1094G
Mechanics; (3) 1090
Moreland—1 1/2 Ton; (3) 1090
Moreland—2 1/2, 4, 10 Ton; (1 ea.) 1092, 1092D, 1094G
Moreland—5, 6 Ton; (1 ea.) 1092, 1092D. 1096
Nash; (1 ea.) 1090, 1092, 1094A
Northwestern; (1 ea.) 1092, 1092D, 1094G
O'Connell; (2) 1090D
Oshkosh—WIS, SU; (1) 1090D
Overland—Models 93, 96; (1) 1090D, (2) 1090
Packard; (1 ea.) 1090, 1090D
Pierce-Arrow; (2) 1090D
Pilot; (1 ea.) 1090, 1092
Ranier—K4; (1 ea.) 1092, 1092D, 1094G
Ranier—B7; (1 ea.) 1092, 1092D, 1096
Reliance; (3) 1090D
Reo—4 cyl.; (1 ea.) 1090A, 1090D, (2) 1092D
Reo—6 cyl.; (1 ea.) 1090D, 1092D
Republic—CT, C4; (1 ea.) 1090, 1090D, 1092
Republic—J4, K4, L4; (1 ea.) 1092, 1092D, 1094G
Republic—V; (1 ea.) 1090, 1090D
Revere; (1) 1090
Sandow—WTU, KTU, ETU; (1) 1092, (2) 1094A
Sandow—YTU, BTU; (1) 1094A, (2) 1096
Sanford—B7; (1 ea.) 1092, 1092D, 1096
Sanford—8R, 7T, L4, 6B, 14H; (1 ea.) 1092, 1092D, 1094G
Sayers-Scoville; (1 ea.) 1092, 1092D, 1094G
Service—81, 103; (1) 1094A, (2) 1096
Service—25, 34, 61; (1) 1092, (2) 1094A
Standard—J4, K4, L4; (1 ea.) 1092, 1092D, 1094G
Standard—5 Ton, B5; (1 ea.) 1092, 1092D, 1096
Sterling—Wauk. FU, V, BU4R; (1 ea.) 1090, 1090D
Stewart—1, 1 1/2 Ton; (1 ea.) 1090, 1090D, 1092
Stewart—2, 3 Ton; (3) 1090D
Stewart—4 Ton; (1) 1094A, (2) 1096
Stoughton; (1) 1094A
Sullivan—2 1/2 Ton; (1) 1092, (2) 1094A
Sullivan—3 1/2 Ton; (1) 1094A, (2) 1096
Three Point; (3) 1090D
Twin City; (1 ea.) 1094A, 1096H
Victor—B5; (1 ea.) 1092, 1092D, 1096
Victor—L4, 14H; (1 ea.) 1092, 1092D, 1094G
White; (2) 1092D
Wilcox—YTU, ATU, BUS; (1) 1094A, (2) 1096
Wilcox—6B, 14H; (1 ea.) 1092, 1092D, 1094G
Wilson; (1) 1090D
Wisconsin—Wauk. FU; (1 ea.) 1090, 1090D
Wisconsin—Cont. J4; (1 ea.) 1092, 1092D, 1094G
Witt-Will—K4, L4; (1 ea.) 1092, 1092D, 1094G
Witt-Will—B5; (1 ea.) 1092, 1092D, 1096

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)

TAPPET WRENCH SET No. 1063

Every "SUPERRENCH" is Guaranteed Against Breakage

This selection of 6 "Superrenches" includes 2 each of 3 sizes. It offers the most comprehensive service for tappet adjustment as it covers every tappet size from 1/2 to 7/8". Since it will care for 80% of all passengers cars and trucks, it is the ideal set for every automobile mechanic.

Furnished heat-treated and Nickel-Finished; heads buffed bright.

No.	Openings Milled	For U. S. Std. Nuts; Size Bolts	For S.A.E. Standard Nuts; Size Bolts	Extreme Length, Approx.	Thickness Heads	PRICE Each, Nickel-Finished
1090D	1/2 & 9/16	1/4	5/16 & 3/8	8	5/32	$ 2.20
1090D	1/2 & 9/16	1/4	5/16 & 3/8	8	5/32	2.20
1092F	5/8 & 11/16	3/8	7/16	8	3/16	2.40
1092F	5/8 & 11/16	3/8	7/16	8	3/16	2.40
1094	3/4 & 7/8	1/2	1/2 & 9/16	9	7/32	2.70
1094	3/4 & 7/8	1/2	1/2 & 9/16	9	7/32	2.70
No. 1063 SET—List Price of Roll $ .80 Extra						$ 14.60

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(*Chrome-Molybdenum*)
AUTOMOTIVE WRENCH SET No. 1025
For Severe Service
No Duplication of Openings

Every "SUPERRENCH" is Guaranteed Against Breakage

Set No. 1025 consists of six "Superrenches" with twelve different openings from 3/8 to 1"—no duplicates. It will fit all U. S. Standard Nuts 1/4 to 1/2, Hex Cap Screws 3/16 to 3/4 and S. A. E. Standard Nuts and Cap Screws 1/4 to 11/16.

The "Superrench" is made of Chrome-Molybdenum steel, the strongest and toughest material for the purpose ever produced. It is designed for the heaviest duty, with ample leverage for the hardest jobs. Thin heads and narrow, pointed jaws enable it to get in and grip in close quarters where no heavier wrench *could* work.

Furnished heat-treated and Nickel-Finished; heads buffed bright.

No.	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length	Thickness Heads	PRICE, Nickel-Finished
1723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	13/64	$ .80
1025	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	1/4	1.16
1027C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	9/32	1.40
1028S	7/16	7/16	7/16	5/8 & 25/32	7 3/4	5/16	1.74
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.14
1033C		3/4	5/8 & 11/16	15/16 & 1	10 3/4	7/16	2.64
No. 1025 Set—List Price of Roll, $1.00 Extra.							$ 9.88

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"
(Chrome-Molybdenum)

AUTOMOTIVE WRENCH SETS
With Openings for Popular
S. A. E. AND U. S. STANDARD NUTS AND CAP SCREWS

Every "SUPERRENCH" is Guaranteed Against Breakage

Furnished heat-treated and Nickel-Finished; heads buffed bright

GENERAL SERVICE SETS Nos. 1002-S and 1002 1/2-S

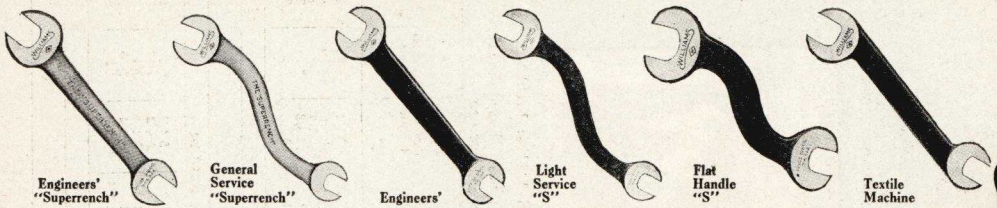
No.	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length	Thickness Heads	PRICE, Nickel-Finished
1077S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	7 1/4	9/32	$ 1.65
1079S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	8 1/4	5/16	2.05
1081A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.50
1083A		3/4	5/8 & 11/16	15/16 & 1	10 3/8	7/16	3.10
1085C	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	1/2	3.90
1002-S Set—List Price of Roll, $1.00 Extra.							$ 13.20
1002½-S Set—Same as 1002-S, but without wrench No. 1085C. List Price of Roll, $ .70 Extra.							9.30

STANDARD SETS Nos. 1005-S and 1005 1/2-S

1725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5 1/2	1/4	$ 1.16
1727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6 1/2	9/32	1.40
1731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	2.14
1033C		3/4	5/8 & 11/16	15/16 & 1	10 3/4	7/16	2.64
1037	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12 1/4	1/2	3.18
1005-S Set—List Price of Roll, $1.00 Extra.							$ 10.52
1005½-S Set—Same as 1005-S, but without wrench No 1037. List Price of Roll, $ .70 Extra.							7.34

*REGISTERED TRADE MARK

SIMPLIFIED WRENCH SELECTION



WILLIAMS — SUPERIOR DROP-FORGED TOOLS

To simplify the selection of Williams' Superior Drop-Forged Wrenches, the openings and numbers of six patterns for popular sizes of U. S. and S. A. E. Standard Nuts and Cap Screws are shown below.

Additional sizes in these and many other patterns are available as listed herein.

Openings Milled	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diameter Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	WRENCH PATTERNS AND NUMBERS					
				The "Superrench"		Carbon Steel Wrenches			
				Engineers'	General Service "S"	Engineers'	Light Service "S"	Flat Handle "S"	Textile Machine
5/16 & 3/8	1/8	1/8 & 3/16	.....	1721	.....	721	.....	661D	.....
5/16 & 13/32	1/8 & 3/16	1/8	.....	1021	.....	21	.....	661A	.....
5/16 & 7/16	1/8	1/8 & 1/4	1/4	1722	.....	722	.....	661E	.....
5/16 & 1/2	1/8 & 1/4	1/8 & 5/16	5/16	1022	.....	22	.....	661B	760A
3/8 & 7/16	.....	3/16 & 1/4	1/4	1723	1075B	723	75B	661F	.....
3/8 & 1/2	.....	3/16 & 5/16	5/16	1723A	1075A	723A	75A	661G	.....
13/32 & 1/2	3/16 & 1/4	5/16	5/16	1023	1075	23	75	661C	760B
13/32 & 19/32	3/16 & 5/16	.....	.....	1024	.....	24	.....	.....	760C
7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1725	1077S	725	77S	662D	760Y
7/16 & 9/16	.....	1/4 & 3/8	1/4 & 3/8	1725A	.....	725A	.....	662E	.....
1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	1725B	1077B	725B	77B	662F	761X
1/2 & 19/32	1/4 & 5/16	5/16	5/16	1025	.....	25	.....	662B	761A

1/2 & 9/8	1/4	5/16 & 7/16	5/16 & 7/16	1726	1077	726	77	662G	761
1/2 & 11/16	1/4 & 3/8	5/16	5/16	1026	.....	26	.....	662C	761B
9/16 & 19/32	5/16	3/8	3/8	.....	1079B	.....	79B	.....	.....
9/16 & 5/8	.....	3/8 & 7/16	3/8 & 7/16	1727	1079S	727	79S	663D	761Z
9/16 & 11/16	3/8	3/8	3/8	1027C	1079A	27C	79A	.....	.....
9/16 & 3/4	.....	3/8 & 1/2	3/8 -& 1/2	1728	.....	728	.....	663E	.....
19/32 & 11/16	5/16 & 3/8	.....	.....	1027	.....	27	79D	663A	761C
19/32 & 25/32	5/16 & 7/16	.....	.....	1028	.....	28	.....	.....	.....
5/8 & 11/16	3/8	7/16	7/16	.....	1079	.....	79	.....	.....
5/8 & 3/4	.....	7/16 & 1/2	7/16 & 1/2	1729	1079C	729	79C	663F	762Y
5/8 & 25/32	7/16	7/16	7/16	1028S	.....	28S	.....	.....	.....
5/8 & 13/16	.....	7/16 & 9/16	7/16	.....	.....	730	.....	663G	.....
5/8 & 7/8	1/2	7/16 & 5/8	7/16 & 9/16	.....	.....	730A	.....	.....	.....
11/16 & 25/32	3/8 & 7/16	.....	.....	1029	.....	29	.....	663C	762B
11/16 & 27/32	3/8	.....	.....	.....	1081	.....	81	.....	.....
11/16 & 7/8	3/8 & 1/2	5/8	9/16	1030	.....	30	.....	664A	762C
3/4 & 13/16	.....	1/2 & 9/16	1/2	1731	1081B	731	81B	.....	.....
3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	1731A	1081A	731A	81A	664E	763Y
25/32 & 7/8	7/16 & 1/2	5/8	9/16	1031	.....	31	.....	664B	763A
25/32 & 31/32	7/16 & 9/16	.....	.....	1032	.....	32	.....	.....	763B
13/16 & 7/8	1/2	9/16 & 5/8	9/16	1731B	.....	731B	.....	664F	.....
13/16 & 1	.....	9/16 & 3/4	11/16	.....	.....	732	.....	.....	.....
27/32 & 15/16	.....	.....	5/8	.....	1083	.....	83	.....	.....
7/8 & 15/16	1/2	5/8	9/16 & 5/8	1033A	.....	33A	83D	.....	.....
7/8 & 31/32	1/2 & 9/16	5/8	9/16	1033	.....	33	.....	665A	763C
7/8 & 1	1/2	5/8 & 3/4	9/16 & 11/16	1733	1083B	733	83B	665E	764
7/8 & 1 1/16	1/2 & 5/8	5/8	9/16 & 3/4	1034	.....	34	83C	665B	764A
7/8 & 1 1/8	1/2	5/8 & 7/8	9/16	1734	.....	734	.....	.....	.....
15/16 & 1	.....	3/4	5/8 & 11/16	1033C	1083A	33C	83A	.....	764Z
15/16 & 1 1/16	5/8	.....	5/8 & 3/4	.....	.....	34A	.....	.....	.....
31/32 & 1 1/16	9/16 & 5/8	.....	3/4	1035	.....	35	.....	665C	764B
31/32 & 1 1/4	9/16 & 3/4	1	7/8	1036	.....	36	.....	666A	.....
1 & 1 1/8	.....	3/4 & 7/8	11/16	1735	1085	735	85	.....	.....
1 & 1 1/4	3/4	3/4 & 1	11/16 & 7/8	1736-	.....	736	.....	.....	.....
1 1/16 & 1 1/4	5/8 & 3/4	1	3/4 & 7/8	1037	1085C	37	85C	666B	765A
1 1/16 & 1 7/16	5/8 & 7/8	.....	3/4 & 1	.....	.....	38	.....	.....	765B
1 1/8 & 1 1/4	3/4	7/8 & 1	7/8	1737	1085B	737	85B	666E	.....
1 1/4 & 1 3/8	3/4	1 & 1 1/8	7/8	.....	.....	739	.....	.....	.....
1 1/4 & 1 7/16	3/4 & 7/8	1	7/8 & 1	.....	.....	39	.....	667A	765C
1 1/4 & 1 1/2	3/4	1 & 1 1/4	7/8	.....	.....	739A	.....	.....	.....
1 1/4 & 1 5/8	3/4 & 1	1 & 1 3/8	7/8 & 1/8	.....	.....	40	.....	667B	.....
1 7/16 & 1 5/8	7/8 & 1	1 3/8	1 & 1 1/8	.....	.....	41	.....	667C	.....

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR
DROP-FORGED WRENCHES
(Carbon Steel)

SUBSTITUTION LIST FOR ELIMINATED SIZES

In the interest of efficiency and economy, a number of slow selling sizes and lines of stock wrenches have been eliminated; these are not included in this catalog.

In addition others are to be eliminated when the present stock runs out. The wrenches in this latter class have all been marked with an asterisk (*) so that they may be readily identified.

The word "Special", following some of the suggested substitute Wrench Numbers on the three following pages, indicates these wrenches must be milled especially to the size opening carried by the eliminated wrench. On small quantities an extra charge will be made to cover the cost of "setting up" machines. No extra charge will be made for this special work when quantities are sufficient to cover the cost.

This list of suggested substitutions for eliminated sizes is issued for the convenience of our customers so that, when desired, a substitute wrench may be easily and quickly selected.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR
DROP-FORGED WRENCHES
(*Carbon Steel*)
SUBSTITUTION LIST FOR ELIMINATED SIZES
ARRANGED NUMERICALLY

Eliminated No.	Suggested Substitute No.	Page
77C	725 A	42
	77 Special	50
79E	728	42
	79 Special	50
81E	730 A	42
	81 Special	50
81C	81 Special	50
81D	31	42
	81 Special	50
85A	736	43
	85 Special	50
100H	502	54
101H	503	54
102H	504	54
102K	505	54
103	702	40
103H	506	54
104	703	40
104H	507	54
105	5 Special	40
105P	507 Special	54
106	705	40
106H	508	54
107	6 Special	40
107H	509	54
108	7 Special	41
108H	510	54
109	8 Special	41
109H	511	54
110	9 Special	41
111	10 Special	41
112	11 Special	41
113	12 Special	41
125H	24 Special	42
	529	55
125K	24 Special	42
	530	55
126	25 Special	42
126H	25 Special	42
	531	55
126K	25 Special	42
	533 Special	55
127	725 B	42
127H	725 B	42
	533	55
128	27 Special	42
128H	27 Special	42
	534	55
129	27 Special	42
129H	27 Special	42
	535	55
130	29 Special	42
131	29 Special	42
131H	29 Special	42
	537	55
132	730	42
133	731	42
134	32 Special	43
134H	32 Special	43
	539 Special	55
135	32 Special	43
136	34 Special	43
137	34 Special	43
138	36 Special	43
138H	36 Special	43
138K	36 Special	43
139	36 Special	43
140	38 Special	43
140H	38 Special	43
141	38 Special	43
141H	38 Special	43
374	376 Special	59
377	379 Special	59
380	382 Special	59
387	389 Special	59
524	21 Special	42
	525 Special	55
	661 Special	48
532	725 A	42
	662 E	48
	533 Special	55
536	728	42
	663 E	49
	537 Special	55
538	730 A	42
	539 Special	55
	664 Special	49
542	734	43
	664 Special	49
543	735	43
	665 Special	49
661H	661 Special	48
	525	55
661J	661 Special	48
	526	55
661K	661 D	48
	527	55
661L	661 E	48
	528	55
662A	662 Special	48
	760 C	51
	24	42
662H	661 F	48
	662 Special	48
	529	55

(*Continued on following page*)

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR
DROP-FORGED WRENCHES
(Carbon Steel)

SUBSTITUTION LIST FOR ELIMINATED SIZES
ARRANGED NUMERICALLY
(Continued)

Eliminated No.	Suggested Substitute No.	Page
662J	661 G	48
	662 Special	48
	530	55
662K	662 D	48
	531	55
662L	662 E	48
	533 Special	55
663B	663 Special	49
	28	42
663H	662 F	48
	663 Special	49
	533	55
	761 X	51
663J	662 G	48
	663 Special	49
	534	55
	761	51
663K	663 D	49
	535	55
	761 Z	51
663P	663 Special	49
664C	664 Special	49
	763 B	51
	32	43
664D	664 Special	49
	731	42
664H	663 E	49
	664 Special	49
	537 Special	55
664J	663 F	49
	664 Special	49
	537	55
	762 Y	51
664K	664 Special	49
	539 Special	55
664N	664 Special	49
664P	664 Special	49
664R	664 Special	49
665D	665 Special	49
	732	43
665F	665 Special	49
	734	43
665G	665 Special	49
	735	43
665H	664 E	49
	665 Special	49
	539	55
	763 Y	51
665J	665 Special	49
	540	55
665K	665 E	49
	541	55
	764	51
666C	666 Special	49
	765 B	51
	38	43
666D	666 Special	49
	736	43
666F	666 Special	49
666H	665 F	49
	666 Special	49
666J	665 G	49
	666 Special	49
666K	666 D	49
666P	666 Special	49
666R	666 Special	49
667D	667 Special	49
	739	43
667E	667 Special	49
	739 A	43
667F	667 Special	49
667H	666 E	49
	667 Special	49
667P	667 Special	49
667R	667 Special	49
668A	42	43
668B	43	43
668C	44	43
668P	667 Special	49
668R	667 Special	49
738	38 Special	43
739B	39 Special	43
762A	28	42
	762 Special	51
763D	33 A	43
	763 Special	51
764D	34 A	43
	764 Special	51
764C	36	43
	764 Special	51
860A	661 A	48
860H	525	55
	661 Special	48
860J	526	55
	661 Special	48
860K	527	55
	661 D	48
861A	661 B	48
	760 A	51
861B	75	50
	661 C	48
	760 B	51
861C	662 Special	48
	760 C	51
861D	75 B	50
	661 F	48
	528	55
861H	661 E	48

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR
DROP-FORGED WRENCHES
(Carbon Steel)

SUBSTITUTION LIST FOR ELIMINATED SIZES

ARRANGED NUMERICALLY

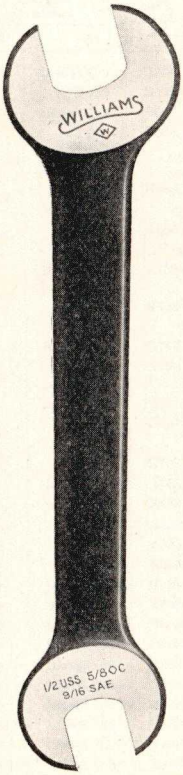
(Continued)

Eliminated No.	Suggested Substitute No.	Page
861J	529	55
	661 F	48
861X	662 B	48
	761 A	51
862A	662 C	48
	761 B	51
862D	75 A	50
	661 G	48
862E	662 Special	48
862F	77 S	50
	662 D	48
	760 Y	51
862G	662 E	48
862H	530	55
	661 G	48
862J	531	55
	662 D	48
862K	532 Special	55
	662 E	48
863A	79 D	50
	663 A	49
	761 C	51
863B	663 Special	49
863D	77 B	50
	662 F	48
	761 X	51
863E	77	50
	662 G	48
	761	51
863H	533	55
	662 F	48
863J	534	55
	662 G	48
864A	663 C	49
	762 B	51
864B	664 A	49
	762 C	51
864D	663 Special	49
864E	79 S	50
	663 D	49
	761 Z	51
864F	663 E	49
864H	535	55
	663 D	49
864J	536 Special	55
	663 E	49
864P	663 Special	49
864R	663 Special	49
865A	664 B	49
	763 A	51
865B	664 Special	49
	763 B	51
865C	665 A	49
	763 C	51
865D	79 C	50
	663 F	49
	762 Y	51
865E	663 C	49
865F	81 B	50
	664 Special	49
865G	31 A	50
	664 E	49
	763 Y	51
865H	537	55
	663 F	49
865J	538 Special	55
	664 Special	49
865K	539	55
	664 E	49
865P	663 Special	49
865R	664 A	49
865X	665 B	49
	764 A	51
866A	665 C	49
	764 B	51
866B	666 A	49
866C	85 C	50
	666 B	49
	765 A	51
866D	665 Special	49
866E	664 F	49
866F	665 Special	49
866G	83 B	50
	665 E	49
	764	51
866H	540	55
	665 Special	49
866J	541	55
	665 E	49
867A	666 Special	49
	765 B	51
867B	667 A	49
	765 C	51
867D	665 Special	49
867E	85	50
	665 Special	49
867F	666 Special	49
867G	85 B	50
	666 E	49
867H	665 F	49
867J	665 Special	49
867K	666 Special	49
867L	666 E	49
868A	667 B	49
868B	667 C	49
868D	666 Special	49
868E	667 Special	49
868F	667 Special	49
868G	667 Special	49
868N	667 Special	49
868P	666 Special	49
868R	667 Special	49
868U	667 Special	49
868Y	667 Special	49
868X	667 Special	49

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SIMPLIFIED FINISH

FOR WILLIAMS' SUPERIOR DROP-FORGED WRENCHES
(Carbon Steel)



"Maximum Finish at Medium Price"

The three old lines of Semi-Finished, Finished (mottled) and Finished (nickel-plated) Carbon Steel Wrenches, previously listed and carried have been discontinued as stock lines. In their place we offer the new *Finished* Wrench at the old *Semi*-Finished list. *One* finish replaces *three!*

Drop-forged from tough carbon steel, these wrenches are made for hard service, yet their beauty is durable. The black finish isn't lacquer; it's enamel—*baked on.* They are smooth-surfaced, with polished heads, and are carefully case-hardened by the "packed" process—no cyanide is tolerated. The openings are accurately milled and the sizes are stamped on the heads.

At the old Semi-Finished price, whether bought for use or resale, these new Finished wrenches are the greatest value ever offered as a standard line. They cut the dealer's stock in two, but they *double* his turnover.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

STANDARD SPECIFICATIONS

FOR

WILLIAMS' SUPERIOR DROP-FORGED WRENCHES
(Carbon-Steel)

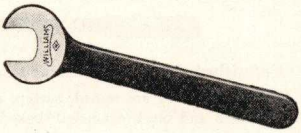
Unfinished Wrench (New)

"Maximum Utility with Minimum Finish"

Openings milled, smooth shanks and case-hardened; no stamping except number and trade mark.

Finished Wrench (New)

"Maximum Finish at Medium Price"



Openings milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on) —heads bright.

All openings are milled slightly larger than stated in tables to allow for clearance and variations.

Special Milling

On small quantities where special openings are specified, an extra charge will be made to cover the cost of "setting up" machines. No extra charge will be made for this special work when quantities are sufficient to cover the cost.

A sample Nut or Screw, as gauge, should accompany orders.

Special Wrenches

made to order. Prices will be quoted upon receipt of models, or drawings and specifications stating kind of finish (see above description) and quantity required.

When Ordering

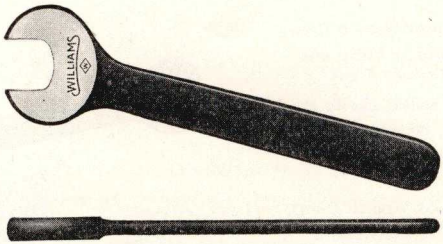
please use numbers and state whether requirements are for U. S. Standard, S. A. E. Standard, Whitworth Standard, or m/m openings and what condition of finish is desired.

Unless otherwise specified, Finished Wrenches will be supplied

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ENGINEERS' WRENCHES
(Carbon Steel)

For U. S. and S. A. E. Standard Nuts and Cap Screws
15° Angle, Single Head



Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

In stock, also, with openings for Whitworth Standard and Metric Measure, see page 177.

(Continued on opposite page)

No.	For U. S. Std. Nut; Size Bolt	For Hex. Head Cap Screw; Diam. Screw	For S.A.E. Std. Nut and Cap Screw; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	PRICE Unfinished (New)	PRICE Finished (New)
00	1/8	1/8		5/16	3 1/2	7/32	$ .22	$ .28
700	3/16	3/16		3/8	4	1/4	.24	.30
0				13/32				
701	1/4	1/4	1/4	7/16	4 5/8	9/32	.29	.36
1		5/16	5/16	1/2				
702	5/16	3/8	3/8	9/16	5 1/2	5/16	.35	.44
2				19/32				
703	3/8	7/16	7/16	5/8	6 3/8	11/32	.42	.52
3				11/16				
704	7/16	1/2	1/2	3/4	7 1/4	3/8	.52	.64
4				25/32				
705	1/2	9/16	9/16	13/16	8 1/8	7/16	.62	.76
5		5/8		7/8				
6	9/16	3/4	11/16	31/32	9 1/4	1/2	.76	.92
706				1				

Weights given page 181.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ENGINEERS' WRENCHES
(*Carbon Steel*)

For U. S. and S. A. E. Standard Nuts and Cap Screws

15° Angle, Single Head

(*Continued*)

The following Finished Wrenches have hole in end of handle.

No.	17	18	19	19A	20	20A	21A	21B	21C	22A	22B
Hole	5/8	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/8	1-1/4	1-1/4

*Furnished from stock till supply is exhausted; thereafter only on special order.

No.	For U. S. Std. Nuts; Size Bolt	For Hex. Head Cap Screw; Diam. Screw	For S.A.E. Std. Nut and Cap Screw; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	PRICE Unfinished (New)	PRICE Finished (New)
7	5/8		3/4	1 1/16	10 1/2	9/16	$ .96	$ 1.14
707		7/8		1 1/8				
8	3/4	1	7/8	1 1/4	12	5/8	1.28	1.50
708A		1 1/8		1 3/8				
9	7/8		1	1 7/16	13 1/2	23/32	2.00	2.30
709		1 1/4		1 1/2				
10	1	1 3/8	1 1/8	1 5/8	15	25/32	2.80	3.20
11	1 1/8		1 1/4	1 13/16	16 1/2	7/8	3.80	4.20
12	1 1/4		1 3/8	2	18 1/4	15/16	5.20	5.70
13	1 3/8		1 1/2	2 3/16	20	1	6.70	7.30
14	1 1/2			2 3/8	22	1 1/16	8.25	9.20
15	1 5/8			2 9/16	24	1 1/8	10.00	11.20
16	1 3/4			2 3/4	27	1 7/32	11.90	13.40
16A	1 7/8			2 15/16				
17	2			3 1/8	30	1 3/8	18.70	20.50
18	2 1/4			3 1/2	34	1 1/2	27.50	29.50
19	2 1/2			3 7/8	38	1 5/8	39.75	42.00
19A	2 3/4			4 1/4				
20	3			4 5/8	42	1 7/8	58.50	62.00
* 20A	3 1/4			5				
* 21A	3 1/2			5 3/8	47	2 1/2	97.00	104.00
* 21B	3 3/4			5 3/4				
* 21C	4			6 1/8				
* 22A	4 1/2			6 7/8	52	3	192.00	204.00
* 22B	5			7 5/8				

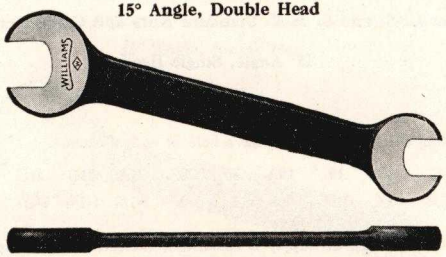
Weights given page 181.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ENGINEERS' WRENCHES

(*Carbon Steel*)

15° Angle, Double Head



For description of new Standard finishes, see page 39.
For Whitworth Standard and Metric Measure, see page 177.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nut and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Unfinished (New)	PRICE Finished (New)
721	1/8	1/8 & 3/16		5/16 & 3/8	4	1/4	$ .28	$ .34
21	1/8 & 3/16	1/8		5/16 & 13/32				
722	1/8	1/8 & 1/4	1/4	5/16 & 7/16	4 1/4	9/32	.34	.42
22	1/8 & 1/4	1/8 & 5/16	5/16	5/16 & 1/2				
723		3/16 & 1/4	1/4	3/8 & 7/16				
723A	1/4	3/16 & 5/16	5/16	3/8 & 1/2	4 5/8	5/16	.34	.42
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2				
724		3/16 & 3/8	3/8	3/8 & 9/16	5	5/16	.40	.50
24	3/16 & 5/16			13/32 & 19/32				
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2				
725A		1/4 & 3/8	1/4 & 3/8	7/16 & 9/16				
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.40	.50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32				
726	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8	6	11/32	.50	.62
26	1/4 & 3/8	5/16	5/16	1/2 & 11/16				
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8				
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.50	.62
27	5/16 & 3/8			19/32 & 11/16				
728		3/8 & 1/2	3/8 & 1/2	9/16 & 3/4	7	3/8	.60	.74
28	5/16 & 7/16			19/32 & 25/32				
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4				
28S	7/16	7/16	7/16	5/8 & 25/32				
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	.60	.74
730		7/16 & 9/16	7/16	5/8 & 13/16	8	7/16	.74	.90
730A	1/2	7/16 & 5/8	7/16 & 9/16	5/8 & 7/8				
30	3/8 & 1/2	5/8	9/16	11/16 & 7/8				
731		1/2 & 9/16	1/2	3/4 & 13/16	8 3/4	15/32	.74	.90
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8				
31	7/16 & 1/2	5/8	9/16	25/32 & 7/8				
731B	1/2	9/16 & 5/8	9/16	13/16 & 7/8				

Weights given pages 181 and 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ENGINEERS' WRENCHES
(*Carbon Steel*)
15° Angle, Double Head
(*Continued*)

*Furnished from stock on hand till supply is exhausted; thereafter only on special order.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S. A. E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Unfinished (New)	PRICE Finished (New)
32	7/16 & 9/16			25/32 & 31/32				
732		9/16 & 3/4	11/16	13/16 & 1				
33A	1/2	5/8	9/16 & 5/8	7/8 & 15/16				
33	1/2 & 9/16	5/8	9/16	7/8 & 31/32	9 1/2	1/2	$ .90	$ 1.10
733	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1				
33C		3/4	5/8 & 11/16	15/16 & 1				
34	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16				
734	1/2	5/8 & 7/8	9/16	7/8 & 1 1/8				
34A	5/8		5/8 & 3/4	15/16 & 1 1/16	10 3/4	9/16	1.12	1.36
35	9/16 & 5/8		3/4	31/32 & 1 1/16				
735		3/4 & 7/8	11/16	1 & 1 1/8				
36	9/16 & 3/4	1	7/8	31/32 & 1 1/4				
736	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4				
37	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	21/32	1.62	1.92
737	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4				
38	5/8 & 7/8		3/4 & 1	1 1/16 & 1 7/16				
*738		7/8 & 1 1/8		1 1/8 & 1 3/8				
739	3/4	1 & 1 1/8	7/8	1 1/4 & 1 3/8				
39	3/4 & 7/8	1	7/8 & 1	1 1/4 & 1 7/16	13 1/2	23/32	2.40	2.80
739A	3/4	1 & 1 1/4	7/8	1 1/4 & 1 1/2				
*739B		1 1/8 & 1 1/4		1 3/8 & 1 1/2				
40	3/4 & 1	1 & 1 3/8	7/8 & 1 1/8	1 1/4 & 1 5/8	15 1/2	3/4	3.30	3.80
41	7/8 & 1	1 3/8	1 & 1 1/8	1 7/16 & 1 5/8				
42	7/8 & 1 1/8		1 & 1 1/4	1 7/16 & 1 13/16	17	27/32	4.60	5.30
43	1 & 1 1/8	1 3/8	1 1/8 & 1 1/4	1 5/8 & 1 13/16				
44	1 & 1 1/4	1 3/8	1 1/8 & 1 3/8	1 5/8 & 2	19	29/32	6.25	7.20
45	1 1/8 & 1 1/4		1 1/4 & 1 3/8	1 13/16 & 2				
46	1 1/8 & 1 3/8		1 1/4 & 1 1/2	1 13/16 & 2 3/16	21	1	9.30	10.50
47	1 1/4 & 1 3/8		1 3/8 & 1 1/2	2 & 2 3/16				
48	1 1/4 & 1 1/2			2 & 2 3/8	23	1 1/16	12.50	14.00
49	1 3/8 & 1 1/2			2 3/16 & 2 3/8				
* 50	1 3/8 & 1 5/8			2 3/16 & 2 9/16	25	1 & 1 1/8	16.25	18.00
* 51	1 1/2 & 1 5/8			2 3/8 & 2 9/16	25	1 1/16 & 1 1/8	18.00	19.80
* 52	1 1/2 & 1 3/4			2 3/8 & 2 3/4	27	1 1/16 & 1 7/32	20.00	22.00
* 53	1 5/8 & 1 3/4			2 9/16 & 2 3/4	27	1 1/8 & 1 7/32	22.00	24.00
* 54	1 5/8 & 2			2 9/16 & 3 1/8	30	1 1/8 & 1 3/8	26.25	28.50
* 55	1 3/4 & 2			2 3/4 & 3 1/8	32	1 7/32 & 1 3/8	28.75	31.00
* 56	1 3/4 & 2 1/4			2 3/4 & 3 1/2	34	1 7/32 & 1 17/32	37.50	40.00
* 57	2 & 2 1/4			3 1/8 & 3 1/2	36	1 3/8 & 1 17/32	44.25	47.00
* 57A	2 & 2 1/2			3 1/8 & 3 7/8	38	1 3/8 & 1 5/8	53.00	56.00
* 58	2 1/4 & 2 1/2			3 1/2 & 3 7/8	38	1 17/32 & 1 5/8	59.00	62.00
* 59	2 1/4 & 2 3/4			3 1/2 & 4 1/4				
* 60	2 1/2 & 2 3/4			3 7/8 & 4 1/4	40	1 5/8 & 1 5/8	71.00	75.00
* 61	2 1/2 & 3			3 7/8 & 4 5/8	43	1 5/8 & 1 7/8	89.00	94.00
* 62	2 3/4 & 3			4 1/4 & 4 5/8				
* 63	2 3/4 & 3 1/2			4 1/4 & 5 3/8	47	1 5/8 & 2 1/2	126.00	135.00
* 64	3 & 3 1/2			4 5/8 & 5 3/8	47	1 7/8 & 2 1/2	146.00	155.00

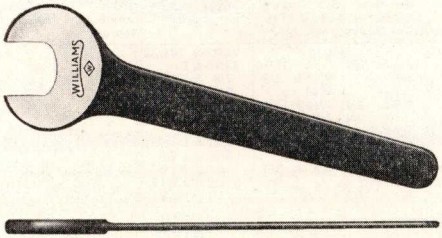
Weights given pages 181 and 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CHECK NUT, OR "THIN" WRENCHES
(Carbon Steel)

15° Angle, Single Head

For Check, Jam, or Lock Nuts, etc.



This class of Wrench is guaranteed amply strong for its intended purpose, but is not designed for severe service.

For Whitworth Standard and Metric Measure, see page 178.

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

No.	For U. S. Std. Nuts; Size Bolt	For Hex. Head Cap Screw; Diam. Screw	For S.A.E. Std. Nut and Cap Screw; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	PRICE	
							Unfinished (New)	Finished (New)
601	1/4	5/16	5/16	1/2	4	5/32	$ .30	$ .36
602	5/16			19/32	4 1/2	11/64	.37	.44
603	3/8			11/16	5 1/8	3/16	.44	.52
604	7/16			25/32	5 7/8	7/32	.55	.64
605	1/2	5/8	9/16	7/8	6 5/8	1/4	66	.76
606	9/16			31/32	7 1/2	9/32	.78	.90
607	5/8		3/4	1 1/16	8 1/2	5/16	.94	1.08
608	3/4	1	7/8	1 1/4	10	3/8	1.20	1.36
609	7/8		1	1 7/16	11 5/8	7/16	1.66	1.84
610	1	1 3/8	1 1/8	1 5/8	13 1/4	1/2	2.40	2.60

Weights given page 182.

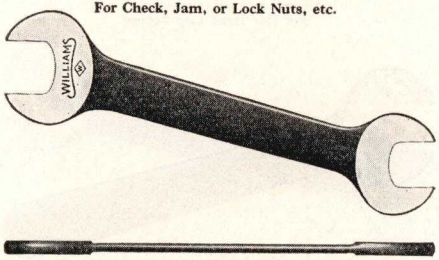
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CHECK NUT, OR "THIN" WRENCHES

(Carbon-Steel)

15° Angle, Double Head

For Check, Jam, or Lock Nuts, etc.



This class of Wrench is guaranteed amply strong for its intended purpose, but it is not designed for severe service.

For description of new Standard finishes, see opposite page.

For Whitworth Standard and Metric Measure, see pages 178 and 179.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE	
							Unfinished (New)	Finished (New)
623E		3/16 & 5/16	5/16	3/8 & 1/2				
623	3/16 & 1/4	5/16	5/16	13/32 & 1/2				
624	3/16 & 5/16			13/32 & 19/32	4 3/4	5/32	$ .42	$ .50
623D	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2				
625	1/4 & 5/16	5/16	5/16	1/2 & 19/32				
626	1/4 & 3/8	5/16	5/16	1/2 & 11/16				
626S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8				
626X	3/8	3/8	3/8	9/16 & 11/16	6	3/16	.54	.64
627	5/16 & 3/8			19/32 & 11/16				
628	5/16 & 7/16			19/32 & 25/32				
629D		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	6 3/4	3/16	.60	.72
629	3/8 & 7/16			11/16 & 25/32				
630	3/8 & 1/2	5/8	9/16	11/16 & 7/8				
630E	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	7 1/2	7/32	.66	.80
631	7/16 & 1/2	5/8	9/16	25/32 & 7/8				
632	7/16 & 9/16			25/32 & 31/32				
633	1/2 & 9/16	5/8	9/16	7/8 & 31/32				
634	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	8 3/4	1/4	.96	1.12
632X		3/4	5/8 & 11/16	15/16 & 1				
635	9/16 & 5/8		3/4	31/32 & 1 1/16				
636	9/16 & 3/4	1	7/8	31/32 & 1 1/4				
635E	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4	10 1/2	9/32	1.48	1.68
637	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4				
635G	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4				
638	5/8 & 7/8		3/4 & 1	1 1/16 & 1 7/16				
639	3/4 & 7/8	1	7/8 & 1	1 1/4 & 1 7/16	12 1/2	3/8	2.35	2.60
640	3/4 & 1	1 & 1 3/8	7/8 & 1 1/8	1 1/4 & 1 5/8				

Weights given page 182.

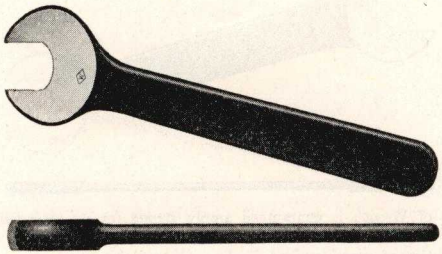
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

HEAVY CAP SCREW WRENCHES

(Carbon-Steel)

15° Angle, Single Head

For Hex Head Cap Screws



This is a line of extra weight designed to withstand the strain in turning Cap Screws, and is considerably stronger than the screws themselves

For smaller sizes and lighter Cap Screw Wrenches see pages 40 and 41.

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

*Furnished from stock on hand till supply is exhausted; thereafter only on special order.

No.	For Hex. Head Cap Screw; Diam. Screw	For U. S. Std. Nut; Size Bolt	For S.A.E. Std. Nut and Cap Screw; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	PRICE	
							Unfinished (New)	Finished (New)
*103	3/8		3/8	9/16	5	5/16	$ .42	$ .50
*104	7/16		7/16	5/8	5 3/4	3/8	52	.62
*105	1/2		1/2	3/4	6 1/2	7/16	.64	.76
*106	9/16			13/16	7 1/4	1/2	.78	.92
*107	5/8	1/2	9/16	7/8	8	9/16	.97	1.14
*108	3/4		11/16	1	9 1/2	5/8	1.24	1.44
*109	7/8			1 1/8	11	3/4	1.69	1.92
*110	1	3/4	7/8	1 1/4	12 1/2	7/8	2.34	2.60
*111	1 1/8			1 3/8	14	15/16	3.10	3.40
*112	1 1/4			1 1/2	15 1/2	1 1/16	3.85	4.20
*113	1 3/8	1	1 1/8	1 5/8	17	1 1/8	4.80	5.20

Weights given page 182.

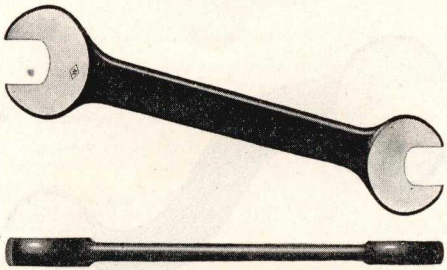
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

HEAVY CAP SCREW WRENCHES

(*Carbon-Steel*)

15° Angle, Double Head

For Hex Head Cap Screws



For smaller sizes and lighter Cap Screw Wrenches see pages 42 and 43.

For description of new Standard finishes, see opposite page.

*Furnished from stock on hand till supply is exhausted; thereafter only on special order.

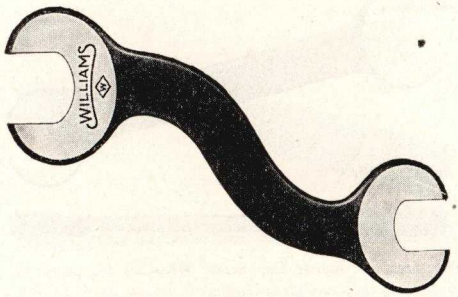
No.	For Hex. Head Cap Screws; Diam. Screws	For U. S. Std. Nuts: Size Bolts	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	PRICE Unfinished (New)	PRICE Finished (New)
*126	1/4 & 3/8		1/4 & 3/8	7/16 & 9/16	5 3/8	$ .50	$ .60
*127	5/16 & 3/8	1/4	5/16 & 3/8	1/2 & 9/16			
*128	5/16 & 7/16	1/4	5/16 & 7/16	1/2 & 5/8	6 1/8	.62	.74
*129	3/8 & 7/16		3/8 & 7/16	9/16 & 5/8			
*130	3/8 & 1/2		3/8 & 1/2	9/16 & 3/4	7	.75	.90
*131	7/16 & 1/2		7/16 & 1/2	5/8 & 3/4			
*132	7/16 & 9/16		7/16	5/8 & 13/16	7 3/4	.92	1.10
*133	1/2 & 9/16		1/2	3/4 & 13/16			
*134	1/2 & 5/8	1/2	1/2 & 9/16	3/4 & 7/8	8 5/8	1.14	1.36
*135	9/16 & 5/8	1/2	9/16	13/16 & 7/8			
*136	9/16 & 3/4		11/16	13/16 & 1	10 1/8	1.55	1.80
*137	5/8 & 3/4	1/2	9/16 & 11/16	7/8 & 1			
*138	5/8 & 7/8	1/2	9/16	7/8 & 1 1/8	11 5/8	2.23	2.50
*139	3/4 & 7/8		11/16	1 & 1 1/8			
*140	3/4 & 1	3/4	11/16 & 7/8	1 & 1 1/4	13 1/4	3.00	3.30
*141	7/8 & 1	3/4	7/8	1 1/8 & 1 1/4			
*142	7/8 & 1 1/8			1 1/8 & 1 3/8	14 3/4	3.95	4.30
*143	1 & 1 1/8	3/4	7/8	1 1/4 & 1 3/8			
*144	1 & 1 1/4	3/4	7/8	1 1/4 & 1 1/2	16 1/4	5.05	5.50
*145	1 1/8 & 1 1/4			1 3/8 & 1 1/2			

Weights given page 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"S" WRENCHES WITH FLAT HANDLE
(Carbon Steel)

22 1/2° Angle, Double Head



Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard, see page 179.

*Furnished from stock till supply is exhausted; thereafter only on special order.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	PRICE Unfinished (New)	PRICE Finished (New)
661D	1/8	1/8 & 3/16		5/16 & 3/8			
661A	1/8 & 3/16	1/8		5/16 & 13/32			
661E	1/8	1/8 & 1/4	1/4	5/16 & 7/16			
661B	1/8 & 1/4	1/8 & 5/16	5/16	5/16 & 1/2	4	$ .37	$ .44
661F		3/16 & 1/4	1/4	3/8 & 7/16			
661G		3/16 & 5/16	5/16	3/8 & 1/2			
661C	3/16 & 1/4	5/16	5/16	13/32 & 1/2			
***662A**	3/16 & 5/16			13/32 & 19/32			
662D	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2			
662E		1/4 & 3/8	1/4 & 3/8	7/16 & 9/16			
662F	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5	.49	.58
662B	1/4 & 5/16	5/16	5/16	1/2 & 19/32			
662G	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8			
662C	1/4 & 3/8	5/16	5/16	1/2 & 11/16			

Weights given page 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"S" WRENCHES WITH FLAT HANDLE
(*Carbon Steel*)

22 1/2° Angle, Double Head

(*Continued*)

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard, see page 179.

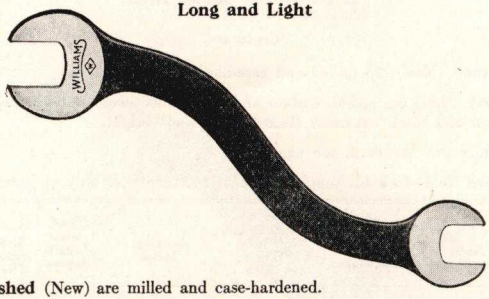
*Furnished from stock till supply is exhausted; thereafter only on special order.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	PRICE Unfinished (New)	PRICE Finished (New)
663D		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8			
663E		3/8 & 1/2	3/8 & 1/2	9/16 & 3/4			
663A	5/16 & 3/8			19/32 & 11/16			
*663B	5/16 & 7/16			19/32 & 25/32	6 1/4	$ .68	$ .78
663F		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4			
663G		7/16 & 9/16	7/16	5/8 & 13/16			
663C	3/8 & 7/16			11/16 & 25/32			
664A	3/8 & 1/2	5/8	9/16	11/16 & 7/8			
*664D		1/2 & 9/16	1/2	3/4 & 13/16			
664E	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	7 1/2	92	1.06
664B	7/16 & 1/2	5/8	9/16	25/32 & 7/8			
*664C	7/16 & 9/16			25/32 & 31/32			
664F	1/2	9/16 & 5/8	9/16	13/16 & 7/8			
*665D		9/16 & 3/4	11/16	13/16 & 1			
665A	1/2 & 9/16	5/8	9/16	7/8 & 31/32			
665E	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1			
665B	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	9	1.25	1.44
*665F	1/2	5/8 & 7/8	9/16	7/8 & 1 1/8			
665C	9/16 & 5/8		3/4	31/32 & 1 1/16			
*665G		3/4 & 7/8	11/16	1 & 1 1/8			
666A	9/16 & 3/4	1	7/8	31/32 & 1 1/4			
*666D	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4			
666B	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	10 1/2	1.75	2.00
*666C	5/8 & 7/8		3/4 & 1	1 1/16 & 1 7/16			
666E	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4			
*666F		7/8 & 1 1/8		1 1/8 & 1 3/8			
*667D	3/4	1 & 1 1/8	7/8	1 1/4 & 1 3/8			
667A	3/4 & 7/8	1	7/8 & 1	1 1/4 & 1 7/16			
*667E	3/4	1 & 1 1/4	7/8	1 1/4 & 1 1/2	12	2.60	2.90
667B	3/4 & 1	1 & 1 3/8	7/8 & 1 1/8	1 1/4 & 1 5/8			
*667F		1 1/8 & 1 1/4		1 3/8 & 1 1/2			
667C	7/8 & 1	1 3/8	1 & 1 1/8	1 7/16 & 1 5/8			
*668A	7/8 & 1 1/8		1 & 1 1/4	1 7/16 & 1 13/16			
*668B	1 & 1 1/8	1 3/8	1 1/8 & 1 1/4	1 5/8 & 1 13/16	14	4.50	5.00
*668C	1 & 1 1/4	1 3/8	1 1/8 & 1 3/8	1 5/8 & 2			

Weights given page 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

LIGHT SERVICE WRENCHES
(*Carbon Steel*)
22 1/2° Angle, Double Head
Long and Light



Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard and Metric Measure, see page 178.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nut and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Unfinished (New)	PRICE Finished (New)
75C	1/8	1/8		1/4 & 5/16				
75B		3/16 & 1/4	1/4	3/8 & 7/16	6 1/4	1/4	$ .45	$ .54
75A		3/16 & 5/16	5/16	3/8 & 1/2				
75	3/16 & 1/4	5/16	5/16	13/32 & 1/2				
77S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2				
77B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	.58	.68
77	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8				
79B	5/16	3/8	3/8	9/16 & 19/32				
79S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8				
79A	3/8	3/8	3/8	9/16 & 11/16	8 1/4	5/16	.73	.86
79D	5/16 & 3/8			19/32 & 11/16				
79	3/8	7/16	7/16	5/8 & 11/16				
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4				
81	3/8			11/16 & 27/32				
81B		1/2 & 9/16	1/2	3/4 & 13/16	9 1/4	3/8	.93	1.10
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8				
83			5/8	27/32 & 15/16				
83D	1/2	5/8	9/16 & 5/8	7/8 & 15/16				
83B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	1.16	1.40
83C	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16				
83A		3/4	5/8 & 11/16	15/16 & 1				
85		3/4 & 7/8	11/16	1 & 1 1/8				
85C	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	1/2	1.65	2.00
85B	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4				

Weights given page 182

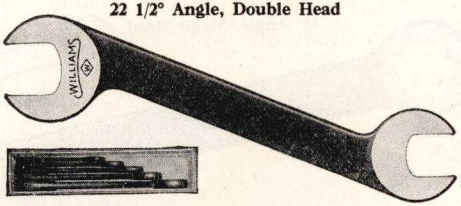
WILLIAMS

SUPERIOR DROP-FORGED TOOLS

TEXTILE MACHINE WRENCHES

(Carbon Steel)

22 1/2° Angle, Double Head



Set furnished in either card-board box or roll.

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard, see page 179.

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S. A. E. Std. Nut and Cap Screws; Size Bolts	Openings Milled	Extreme Length Approx.	Thickness Heads	PRICE Unfinished (New)	PRICE Finished (New)
760A	1/8 & 1/4	1/8 & 5/16	5/16	5/16 & 1/2				
760B	3/16 & 1/4	5/16	5/16	13/32 & 1/2				
760C	3/16 & 5/16			13/32 & 19/32	4 3/4	1/4	$ .42	$ .50
760Y	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2				
761X	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16				
761A	1/4 & 5/16	5/16	5/16	1/2 & 19/32				
761	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8				
761B	1/4 & 3/8	5/16	5/16	1/2 & 11/16	5 3/4	5/16	.52	.62
761Z		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8				
761C	5/16 & 3/8			19/32 & 11/16				
*762A	5/16 & 7/16			19/32 & 25/32				
762Y		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4				
762B	3/8 & 7/16			11/16 & 25/32	7	3/8	.68	.80
762C	3/8 & 1/2	5/8	9/16	11/16 & 7/8				
763Y	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8				
763A	7/16 & 1/2	5/8	9/16	25/32 & 7/8				
763B	7/16 & 9/16			25/32 & 31/32	8 1/4	7/16	90	1.06
*763D	1/2	5/8	9/16 & 5/8	7/8 & 15/16				
763C	1/2 & 9/16	5/8	9/16	7/8 & 31/32				
764	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1				
764A	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16				
764Z		3/4	5/8 & 11/16	15/16 & 1				
*764D	5/8		5/8 & 3/4	15/16 & 1 1/16	9 1/2	1/2	1.20	1.44
764B	9/16 & 5/8		3/4	31/32 & 1 1/16				
*764C	9/16 & 3/4	1	7/8	31/32 & 1 1/4				
765A	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4				
765B	5/8 & 7/8		3/4 & 1	1 1/16 & 1 7/16	11	9/16	1.60	1.92
765C	3/4 & 7/8	1	7/8 & 1	1 1/4 & 1 7/16				

SET FOR TEXTILE MACHINERY

With Openings for Every Nut for Bolt from 3/16 to 7/8 Diameter

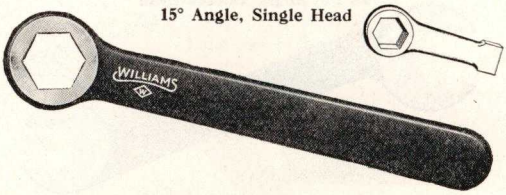
760B	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 3/4	1/4	$ .42	$ .50
761C	5/16 & 3/8			19/32 & 11/16	5 3/4	5/16	.52	.62
763A	7/16 & 1/2	5/8	9/16	25/32 & 7/8	8 1/4	7/16	.90	1.06
764B	9/16 & 5/8		3/4	31/32 & 1 1/16	9 1/2	1/2	1.20	1.44
765C	3/4 & 7/8	1	7/8 & 1	1 1/4 & 1 7/16	11	9/16	1.60	1.92
Set	List Price in Roll, $1.00 extra						$4.64	$5.54

* Furnished from stock till supply is exhausted; thereafter only on special order. Weights given page 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

HEX BOX WRENCHES
(*Carbon Steel*)

15° Angle, Single Head



Unhardened are broached only.

Finished—see description on opposite page.

Designed for purposes where there is necessity for an exceedingly strong and light tool and where head clearance is limited. Wrenches of this style but with handle tapered will be furnished on orders for the larger sizes, beginning with No. 811.

†At extra charge Numbers 818 to 820 inclusive are also furnished with "striking-face" on end of handle, as shown by small outline cut; lengths as follows:

Number,	818	819	819A	820
Length,	18 1/2	19 1/2	20 1/4	21

For Whitworth Standard, see page 179.

*Furnished from stock till supply is exhausted; thereafter only on special order.

No.	For U. S. Std. Nut; Size Bolt	Short Diameter Opening Brchd.	Extreme Length, Approx.	Head		PRICE		No.
				Thickness	Outside Diameter	Unhardened	Finished (New)	
800	3/16	13/32	3 1/2	3/16	3/4	$ .26	$ .36	**800**
801	1/4	1/2	4	1/4	29/32	.30	.42	**801**
802	5/16	39/64	4 7/8	9/32	1 3/32	.36	.50	**802**
803	3/8	45/64	5 7/8	5/16	1 1/4	.42	.58	**803**
804	7/16	51/64	6 7/8	11/32	1 3/8	.50	.70	**804**
805	1/2	57/64	7 3/4	25/64	1 1/2	.60	.84	**805**
806	9/16	63/64	8 3/4	7/16	1 5/8	.72	1.00	**806**
807	5/8	1 5/64	9 7/8	31/64	1 3/4	.90	1.24	**807**
808	3/4	1 17/64	11 1/2	9/16	2 1/16	1.16	1.56	**808**
809	7/8	1 29/64	13 3/8	21/32	2 3/8	1.56	2.08	**809**
810	1	1 21/32	15 1/4	3/4	2 5/8	2.10	2.80	**810**
811	1 1/8	1 27/32	17 1/8	13/16	2 7/8	2.80	3.70	**811**
812	1 1/4	2 1/32	19	15/16	3 1/4	3.70	4.80	**812**
813	1 3/8	2 7/32	21	1	3 1/2	4.70	6.00	**813**
814	1 1/2	2 13/32	23	1 1/16	3 3/4	6.00	7.50	**814**
***815**	1 5/8	2 19/32	25	1 1/8	4	7.50	9.20	***815**
***816**	1 3/4	2 25/32	27	1 1/4	4 1/4	9.80	12.50	***816**
***817**	2	3 5/32	30	1 3/8	4 3/4	13.00	17.00	***817**
†***818**	2 1/4	3 35/64	†34	1 1/2	5 1/4	17.00	22.00	†***818**
†***819**	2 1/2	3 59/64	†38	1 5/8	5 7/8	23.00	29.00	†***819**
†***819A**	2 3/4	4 19/64	†42	1 3/4	6 1/2	30.00	37.00	†***819A**
†***820**	3	4 43/64	†46	1 7/8	7	40.00	50.00	†***820**

Weights given page 182.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SQUARE BOX WRENCHES
(Carbon Steel)

22 1/2° Angle, Single Head

Unhardened are broached.

Finished (New) are broached, surface and edges smoothed, case-hardened and black enameled (baked on)—heads bright.

No.	For Set Screw; Size	Extreme Length, Approx.	Head		PRICE		No.
			Thickness	Outside Diam.	Unhardened	Finished (New)	
580	3/16	3	1/4	1/2	$ .22	$ .30	580
581	1/4	3 3/8	9/32	5/8	.24	.34	581
582	5/16	3 3/4	5/16	11/16	.28	.40	582
583	3/8	4 1/4	3/8	27/32	.32	.48	583
584	7/16	4 7/8	7/16	31/32	.38	.56	584
585	1/2	5 1/2	15/32	1 1/16	.46	.68	585
586	9/16	6 1/4	1/2	1 3/16	.56	.82	586
587	5/8	7	9/16	1 5/16	.70	1.00	587
588	3/4	8	5/8	1 9/16	.88	1.24	588
589	7/8	9	11/16	1 25/32	1.20	1.62	589
590	1	10	3/4	2	1.60	2.10	590

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SET SCREW WRENCHES
(Carbon Steel)

22 1/2° Angle, Single Head

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

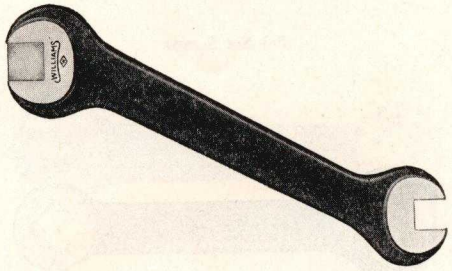
For Metric Measure, see page 178.

No.	Milled Opening For Set Screw; Size	Extreme Length, Approx.	Thickness Head	PRICE		No.
				Unfinished (New)	Finished (New)	
500	3/16	3	3/16	$ .24	$ .28	**500**
501	1/4	3 1/2	1/4	.29	.34	**501**
502	5/16	4 1/4	5/16	.35	.42	**502**
503	3/8	5	11/32	.42	.50	**503**
504	7/16	5 3/4	3/8	.52	.62	**504**
505	1/2	6 5/8	7/16	63	.76	**505**
506	9/16	7 1/2	1/2	76	.92	**506**
507	5/8	8 1/2	9/16	91	1.10	**507**
508	3/4	9 1/2	5/8	1.14	1.36	**508**
509	7/8	10 1/2	11/16	1.43	1.68	**509**
510	1	11 1/2	3/4	1.92	2.20	**510**
511	1 1/8	12 1/2	13/16	2.50	2.80	**511**

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SET SCREW WRENCHES
(Carbon Steel)
22 1/2° Angle, Double Head



Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

*Furnished from stock on hand till supply is exhausted; thereafter on special order only.

No.	Milled Openings For Set Screws; Size	Extreme Length, Approx.	Thickness Head	PRICE Unfinished (New)	PRICE Finished (New)	No.
523	3/16 & 1/4	3 1/2	7/32	$ .34	$ .40	523
*524	3/16 & 5/16	4 1/4	9/32	.40	.48	*524
525	1/4 & 5/16					525
526	1/4 & 3/8	5	11/32	.48	.58	526
527	5/16 & 3/8					527
528	5/16 & 7/16	5 3/4	3/8	.58	.70	528
529	3/8 & 7/16					529
530	3/8 & 1/2	6 5/8	7/16	.74	.90	530
531	7/16 & 1/2					531
*532	7/16 & 9/16	7 1/2	1/2	.88	1.08	*532
533	1/2 & 9/16					533
534	1/2 & 5/8	8 1/2	9/16	1.07	1.30	534
535	9/16 & 5/8					535
*536	9/16 & 3/4	9 3/4	5/8	1.33	1.60	*536
537	5/8 & 3/4					537
*538	5/8 & 7/8	11	11/16	1.70	2.00	*538
539	3/4 & 7/8					539
540	3/4 & 1	12 1/2	3/4	2.25	2.60	540
541	7/8 & 1					541
*542	7/8 & 1 1/8	14	13/16	3.10	3.50	*542
*543	1 & 1 1/8					*543

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DOUBLE HEAD
TOOL POST WRENCHES
(Carbon Steel)

For Set Screws

Unfinished (New) are milled and broached and case-hardened.

Finished (New) are milled and broached, surface and edges smoothed, case-hardened and black enameled (baked on)—heads bright.

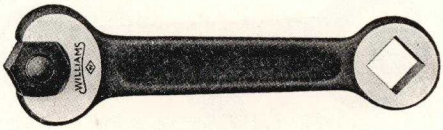
No.	Open End for Set Screw; Size	Closed End for Set Screw; Size	Extreme Length, Approx.	Thickness Heads	PRICE		No.
					Unfinished (New)	Finished (New)	
554	7/16	7/16	5 1/2	1/2 & 1/2	$ .95	$ 1.12	**554**
555	1/2	1/2	6	9/16 & 9/16	1.05	1.24	**555**
555B	9/16	1/2					**555B**
555C	9/16	9/16					**555C**
556	5/8	5/8	7	5/8 & 5/8	1.22	1.44	**556**
556B	11/16	5/8					**556B**
556C	11/16	11/16					**556C**
557	3/4	3/4	7 5/8	11/16 & 11/16	1.40	1.64	**557**

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DOUBLE HEAD TOOL POST WRENCHES
(Carbon Steel)

For U. S. Standard Nuts and Set Screws



Unfinished (New) are milled and broached and case-hardened.

Finished (New) are milled and broached, surface and edges smoothed, sizes stamped, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard, see page 178.

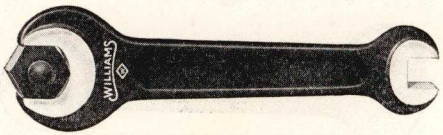
No.	Open End for U. S. Standard Nut		Closed End for Set Screw; Size	Extreme Length, Approx.	Thickness Heads	PRICE		No.
	Size Bolt	Opening Milled				Unfinished (New)	Finished (New)	
562	3/8	11/16	9/16	6 1/2	1/2	$ 1.15	$ 1.32	562
563	1/2	7/8	7/16					563
563B	1/2	7/8	1/2					563B
563C	1/2	7/8	9/16	7	9/16	1.22	1.44	563C
563D	1/2	7/8	5/8					563D
564	5/8	1 1/16	5/8	7 1/2	5/8	1.40	1.64	564
565	5/8	1 1/16	3/4	8	5/8	1.70	1.94	565
566	3/4	1 1/4	3/4	9 1/4	3/4	2.10	2.40	566
566B	3/4	1 1/4	7/8					566B
567	3/4	1 1/4	1					567
567B	7/8	1 7/16	7/8	10	7/8	2.90	3.20	567B
567C	7/8	1 7/16	1					567C
568	1	1 5/8	7/8					568
568B	1	1 5/8	1					568B
568C	1 1/8	1 13/16	1	11	15/16	4.00	4.40	568C
568D	1 1/4	2	1					568D

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

MACHINE WRENCHES
(*Carbon Steel*)

Extra Heavy for Planers
Milling Machines, Lathes, Drill Presses, etc.



Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, size stamped on large head, case-hardened and black enameled (baked on)—heads bright.

*Furnished from stock till supply is exhausted; thereafter only on special order.

No.	Large Head for U. S. Standard Nut		Small Head for Set Screw; Size	Extreme Length, Approx.	Thickness Heads	PRICE		No.
	Size Bolt	Openings Milled				Unfinished (New)	Finished (New)	
*595	3/8	11/16	3/8	6 1/2	17/32	$ .98	$ 1.16	*595
*595B	3/8	11/16	7/16					*595B
*595C	3/8	11/16	1/2					*595C
*595D	7/16	25/32	3/8					*595D
*595E	7/16	25/32	7/16					*595E
*595F	7/16	25/32	1/2					*595F
*596	1/2	7/8	7/16	7 1/2	19/32	1.22	1.44	*596
*596B	1/2	7/8	1/2					*596B
*596C	1/2	7/8	9/16					*596C
*596D	1/2	7/8	5/8					*596D
*596E	9/16	31/32	7/16					*596E
*596F	9/16	31/32	1/2					*596F
*596G	9/16	31/32	9/16					*596G
*596H	9/16	31/32	5/8					*596H
*597	5/8	1 1/16	9/16	8 1/2	11/16	1.68	1.92	*597
*597B	5/8	1 1/16	5/8					*597B
*597C	5/8	1 1/16	3/4					*597C
*598	3/4	1 1/4	3/4	10	13/16	2.40	2.70	*598
*598B	3/4	1 1/4	7/8					*598B
*598C	3/4	1 1/4	1					*598C
*598D	7/8	1 7/16	3/4					*598D
*598E	7/8	1 7/16	7/8					*598E
*598F	7/8	1 7/16	1					*598F

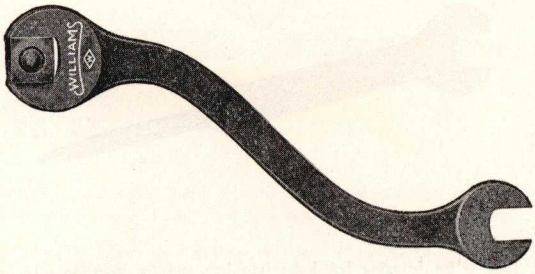
Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CAR WRENCHES
(*Carbon Steel*)

22 1/2° Angle, Double Head

Long Leverage



Unhardened are milled only.

Hardened are milled, hardened all over; heads not ground.

*Furnished from stock till supply is exhausted; thereafter only on special order.

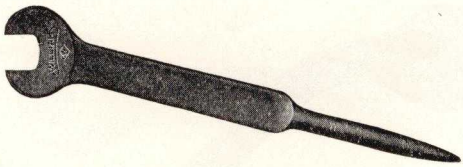
No.	For U. S. Standard Nuts; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Unhardened	PRICE Hardened	No.
367	3/8 & 1/2	23/32 & 29/32	12	7/16 & 7/16	$ 1.10	$ 1.50	367
370	1/2 & 5/8	15/16 & 1 1/8	19	1/2 & 1/2	1.90	2.50	370
371	1/2 & 3/4	15/16 & 1 5/16	20	1/2 & 1/2	2.30	3.10	371
373	5/8 & 3/4	1 1/8 & 1 5/16					373
*374	5/8 & 7/8	1 1/8 & 1 1/2	21	9/16 & 9/16	2.70	3.70	*374
376	3/4 & 7/8	1 5/16 & 1 1/2					376
*377	3/4 & 1	1 5/16 & 1 11/16	22	9/16 & 9/16	3.30	4.50	*377
379	7/8 & 1	1 1/2 & 1 11/16					379
*380	7/8 & 1 1/8	1 1/2 & 1 7/8	23	5/8 & 5/8	3.90	5.30	*380
382	1 & 1 1/8	1 11/16 & 1 7/8					382
383	1 & 1 1/4	1 11/16 & 2 1/16	24	5/8 & 5/8	4.50	6.30	383
385	1 1/8 & 1 1/4	1 7/8 & 2 1/16					385
*387	1 1/8 & 1 1/2	1 7/8 & 2 7/16	25	3/4 & 3/4	6.80	9.00	*387
389	1 1/4 & 1 1/2	2 1/16 & 2 7/16					389

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CONSTRUCTION WRENCHES
(Carbon Steel)

15° Angle



The tang is for bringing bolt-holes into line and for insertion into convenient openings when wrench is not in use, preventing loss and keeping tool in sight.

Unhardened are milled only.

Hardened are milled, hardened all over; heads not ground.

For Whitworth Standard, see page 178.

No.	For U. S. Standard Nut; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	PRICE		No.
					Unhardened	Hardened	
201	1/4	1/2	8	3/8	$ .56	$ .70	201
202	5/16	19/32					202
203	3/8	11/16	9 1/2	7/16	.70	.90	203
204	7/16	25/32					204
205	1/2	7/8	11	1/2	.90	1.16	205
206	9/16	31/32					206
207	5/8	1 1/16	13	9/16	1.24	1.60	207
208	3/4	1 1/4	15	5/8	1.72	2.20	208
209	7/8	1 7/16	17	11/16	2.36	3.00	209
210	1	1 5/8	19	3/4	3.20	4.20	210
211	1 1/8	1 13/16	21	7/8	4.40	6.00	211
212	1 1/4	2					212

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

STRUCTURAL WRENCHES
(Carbon Steel)

Straight Opening

The tang is for bringing bolt-holes into line and for insertion into convenient openings when wrench is not in use, preventing loss and keeping tool in sight.

The offset in handle provides for clearance of obstructions and safety for the hands of operator.

Unhardened are milled only.

Hardened are milled, hardened all over; heads not ground.

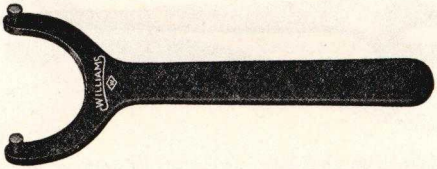
For Whitworth Standard, see page 179.

No.	For U. S. Standard Nut; Size Bolt	Opening Milled	Extreme Length, Approx.	Thickness Head	Handle Offset	PRICE		No.
						Unhardened	Hardened	
901	1/4	17/32	8	3/8	13/16.	$ 66	$ .80	901
902	5/16	5/8						902
903	3/8	23/32	9 1/2	7/16	7/8.	.80	1.04	903
904	7/16	13/16						904
905	1/2	29/32	11	1/2	1	1.04	1.40	905
906	9/16	1						906
907	5/8	1 7/64	13	9/16	1 1/8	1.48	1.96	907
908	3/4	1 19/64	15	5/8	1 1/4	2.04	2.68	908
909	7/8	1 1/2	17	11/16	1 5/16	2.80	3.60	909
910	1	1 11/16	19	3/4	1 3/8	3.80	5.00	910
910A	1 1/8	1 7/8						910A
911	1 1/8	1 7/8	21	7/8	1 1/2	6.00	7.50	911
912	1 1/4	2 1/16						912

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

FACE SPANNERS
(*Carbon Steel*)



Unfinished (New) have pins milled, and are case-hardened all over.

Finished (New) have surface and edges smoothed, pins milled, and are case-hardened and black enameled (baked on).

The pins are forged integral with the wrench.

No.	Pins			Span of Jaws in Clear	Length from C. of Pins	Thickness	PRICE		No.
	Distance C to C	Diam. Milled	Length				Unfinished (New)	Finished (New)	
418	1	3/16	3/16	11/16	4 1/2	3/16	$ .54	$ .60	418
420	1 1/4	7/32	7/32	7/8	5	3/16	.59	.66	420
422	1 1/2	7/32	7/32	1 1/8	5 1/2	3/16	.66	.74	422
424	1 3/4	7/32	7/32	1 3/8	6	7/32	.75	.84	424
426	2	1/4	1/4	1 19/32	6 1/2	7/32	.86	.96	426
428	2 1/4	1/4	1/4	1 27/32	7	7/32	1.00	1.10	428
430	2 1/2	9/32	9/32	2 1/32	7 1/2	1/4	1.15	1.28	430
432	2 3/4	9/32	9/32	2 9/32	8	1/4	1.35	1.48	432
434	3	5/16	5/16	2 1/2	8 1/2	1/4	1.55	1.70	434
436	3 1/4	5/16	5/16	2 3/4	9/1/8	1/4	1.77	1.94	436
438	3 1/2	5/16	5/16	3	9 3/4	1/4	2.00	2.20	438
440	3 3/4	3/8	3/8	3 3/16	10 3/8	1/4	2.30	2.50	440
442	4	3/8	3/8	3 7/16	11	1/4	2.65	2.90	442

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ADJUSTABLE FACE SPANNER
(Carbon Steel)

PATENTED IN U. S. A.

Drop-forged from a strong, tough grade of carefully selected steel, this is a desirable and dependable tool for service where Center to Center dimensions vary.

Unfinished (New) have pins milled and are case-hardened.

Finished (New) have pins milled, surface and edges smoothed, case-hardened and are black enameled (baked on).

No.	Extreme Capacity	Extreme Length, Approx.	Diameter of Pins	PRICE		No.
				Unfinished (New)	Finished (New)	
482	2	6 3/8	3/16	$ 1.35	$ **1.50**	**482**
483	3	8 1/4	1/4	2.00	**2.20**	**483**
484	4	10 3/8	5/16	2.95	**3.20**	**484**

ADJUSTABLE HOOK SPANNERS

PATENTED IN U. S. A.

This Spanner offers an unusual combination of strength and ready adjustment; each tool provides for service upon a number of dimensions—see table.

They are drop-forged from a strong, tough grade of carefully selected steel.

Finished (New) have surface and edges smoothed and are black enameled (baked on); the jaws are hardened and tempered.

No.	Capacity for Circles, Diameter	Extreme Length, Approx.	Thickness		Depth Hook	PRICE	No.
			Handle	Hook		Finished	
471	3/4 to 2	6 3/8	1/4	5/16	1/8	$ **1.75**	**471**
472	1 1/4 to 3	8 1/8	9/32	3/8	5/32	**2.00**	**472**
474	2 to 4 3/4	11 3/8	5/16	7/16	3/16	**2.75**	**474**

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

HOOK SPANNERS
(*Carbon Steel*)
Not Machined

The diameter of circle which the unfinished forgings fit is given in second column of table, but wrenches will finish to sizes stated in third column.

No.	Forgings for Circle; Diameter	Forgings will finish for Circles; Diameter	Extreme Length, Approx.	Thickness	PRICE Each	No.
403	1 1/4	1 to 1 1/4	4 3/4	7/32	$ .40	**403**
404	1 1/2	1 3/8 to 1 5/8	6	1/4	.46	**404**
405	2	1 3/4 to 2	7 1/8	1/4	.52	**405**
406	2 1/4	2 1/8 to 2 3/8	8 7/16	1/4	.60	**406**
407	2 5/8	2 1/2 to 2 3/4	9 3/4	1/4	.68	**407**
408	3 1/8	2 7/8 to 3 1/4	11	5/16	.80	**408**
409	3 3/4	3 3/8 to 3 7/8	12	5/16	.96	**409**
410	4 3/8	4 to 4 1/2	13	5/16	1.16	**410**
412	5 3/4	5 1/4 to 5 3/4	15	7/16	1.70	**412**

LIGHT HOOK SPANNERS
(*Carbon Steel*)
Not Machined

Length of handle can be varied if desired.

No.	For Circle; Diameter	Extreme Length, Approx.	Hook			Diameter Handle	PRICE Each	No.
			Length	Width	Thickness			
491	1 3/16	6 1/2	1/16	3/8	7/32	3/8	$ .30	**491**
493	1 3/4	7 1/2	1/8	3/8	7/32	3/8	.34	**493**
494	2 1/8	8	1/8	3/8	7/32	3/8	.36	**494**
495	2 1/2	8 1/4	1/8	3/8	7/32	3/8	.40	**495**
496	2 3/4	8 1/2	1/8	3/8	7/32	3/8	.44	**496**
497	3	8 3/4	1/8	3/8	7/32	3/8	.48	**497**
498	3 1/2	9	1/8	3/8	7/32	3/8	.52	**498**

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

PIN SPANNERS
(Carbon Steel)

Unfinished (New) have pins milled and are case-hardened all over.

Finished (New) have pins milled, surface and edges smoothed, and are case-hardened all over and black enameled (baked on).

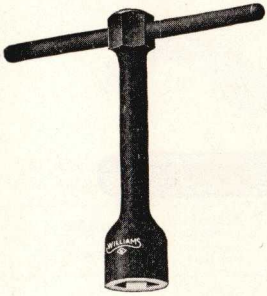
The pins are forged integral with the wrench.

Number	For Circle; Diameter	Extreme Length, Approx.	Finished Diameter Pin	PRICE		Number
				Unfinished (New)	Finished (New)	
452	1	4	3/16	$ .44	$ .54	**452**
453	1 1/4	4 1/2	13/64	.46	.58	**453**
454	1 1/2	5	7/32	.48	.60	**454**
455	1 3/4	5 1/2	15/64	.50	.62	**455**
456	2	6	1/4	.53	.66	**456**
457	2 1/4	6 1/2	17/64	.57	.70	**457**
458	2 1/2	7	9/32	.61	.72	**458**
459	2 3/4	7 1/2	19/64	.65	.78	**459**
460	3	8	5/16	.70	.84	**460**
461	3 1/4	8 1/2	21/64	.75	.90	**461**
462	3 1/2	9	11/32	.80	.96	**462**
463	3 3/4	9 1/2	23/64	.85	1.02	**463**
464	4	10	3/8	.90	1.08	**464**
466	5	12	7/16	1.18	1.44	**466**
468	6	14	1/2	1.60	1.96	**468**

Weights given page 183.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SOCKET WRENCHES
(*Carbon Steel*)



STRAIGHT PATTERN

With or Without Pin-Handle

Unhardened are broached only.

Finished (New) are broached, surface smoothed, case-hardened and black enameled (baked on).

For Whitworth Standard, see page 179.

Special broaching to order in reasonable quantities.

(*Continued on following page*)

Unless otherwise specified, Wrenches with Pin Handles will be supplied.

No.	HEXAGON OPENINGS: For U. S. Standard Nut; Size Bolt	For Cap Screw; Diam. Screw	For S.A.E. Std. Nut and Cap Screw; Size Bolt	Broached Opening Across Flats	Diam. of Head	Extreme Length, Approx.	PRICE: Unhardened: Without Pin Handle	Unhardened: With Pin Handle	Finished (New): Without Pin Handle	Finished (New): With Pin Handle	No.
961A	1/8			21/64	1/2	4 1/4	$ .40	$ .60	$ .60	$ .80	**961A**
962D		3/16		25/64	5/8	4 1/2	.44	.66	.66	.88	**962D**
963A	3/16			27/64	11/16	4 7/8	.48	.74	.72	.98	**963A**
963D		1/4	1/4	29/64							**963D**
964A	1/4	5/16	5/16	33/64	3/4	5 1/4	.52	.78	.78	1.04	**964A**
965D		3/8	3/8	37/64	7/8	5 3/4	.58	.86	.88	1.16	**965D**
965A	5/16			39/64							**965A**
966D		7/16	7/16	41/64	1	6 1/8	.64	.94	.96	1.26	**966D**
967A	3/8			45/64	1 1/8	6 1/2	.72	1.06	1.08	1.42	**967A**
967D		1/2	1/2	49/64							**967D**
968A	7/16			51/64	1 1/4	7	.80	1.14	1.20	1.54	**968A**
968D		9/16		53/64							**968D**
969A	1/2	5/8	9/16	57/64	1 3/8	7 3/8	.92	1.28	1.38	1.74	**969A**
970S			5/8	61/64							**970S**
970A	9/16			63/64	1 1/2	7 7/8	1.04	1.44	1.56	1.96	**970A**
970D		3/4	11/16	1 1/64							**970D**
971A	5/8		3/4	1 5/64	1 5/8	8 1/4	1.20	1.60	1.80	2.20	**971A**
971D		7/8		1 5/32							**971D**
973A	3/4	1	7/8	1 9/32	1 7/8	9 1/8	1.60	2.20	2.40	3.00	**973A**
974D		1 1/8		1 13/32	2	9 1/2	1.80	2.50	2.70	3.40	**974D**
975A	7/8		1	1 15/32	2 1/8	10	2.00	2.70	3.00	3.70	**975A**
975D		1 1/4		1 17/32							**975D**
976A	1	1 3/8	1 1/8	1 21/32	2 1/4	10 3/8	2.30	3.10	3.44	4.24	**976A**
977A	1 1/8		1 1/4	1 27/32	2 1/2	10 7/8	2.60	3.50	3.90	4.80	**977A**
978A	1 1/4		1 3/8	2 1/32	2 3/4	11 3/8	3.20	4.10	4.80	5.70	**978A**
979A	1 3/8		1 1/2	2 7/32	3	11 7/8	4.20	5.20	6.30	7.30	**979A**
980A	1 1/2			2 13/32	3 5/16	12 1/2	5.60	6.90	8.40	9.70	**980A**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

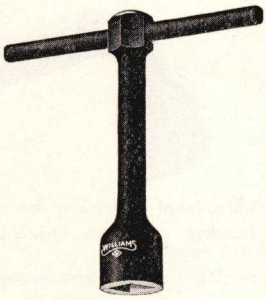
SOCKET WRENCHES

(Carbon Steel)

STRAIGHT PATTERN

With or Without Pin-Handle

(Continued from previous page)



Hexagon end of shank is designed for use in combination with another wrench or with Pin-Handle.

Wrenches of shorter or longer lengths than stated in table can be furnished to order in quantities.

*Furnished from stock till supply is exhausted; thereafter only on special order.

Unless otherwise specified Wrenches with Pin-Handles will be sent.

No.	SQUARE OPENINGS: For U. S. Standard Nut; Size Bolt	SQUARE OPENINGS: For Cap Screw; Diam. Screw	SQUARE OPENINGS: For Set Screw; Size	SQUARE OPENINGS: Broached Opening	Diam. of Head	Extreme Length, Approx.	PRICE: Unhardened: Without Pin-Handle	PRICE: Unhardened: With Pin-Handle	PRICE: Finished (New): Without Pin-Handle	PRICE: Finished (New): With Pin-Handle	No.
960H			1/8	1/8	5/16	3 3/4	$ .36	$ .52	$ .54	$ .70	**960H**
961H			3/16	13/64	1/2	4 1/4	.40	.60	.60	.80	**961H**
961J			1/4	17/64							**961J**
962H			5/16	21/64	5/8	4 1/2	.44	.66	.66	.88	**962H**
963H		1/4	3/8	25/64	11/16	4 7/8	.48	.74	.72	.98	**963H**
965H		5/16	7/16	29/64	7/8	5 3/4	.58	.86	.88	1.16	**965H**
966H	1/4	3/8	1/2	33/64	1	6 1/8	.64	.94	.96	1.26	**966H**
967H		7/16	9/16	37/64	1 1/8	6 1/2	72	1.06	1.08	1.42	**967H**
***967X**	5/16			39/64							***967X**
968H		1/2	5/8	41/64	1 1/4	7	.80	1.14	1.20	1.54	**968H**
968P	3/8	9/16		45/64							**968P**
969H		5/8	3/4	49/64	1 3/8	7 3/8	.92	1.28	1.38	1.74	**969H**
***970X**	7/16			51/64	1 1/2	7 7/8	1.04	1.44	1.56	1.96	***970X**
971H	1/2	3/4	7/8	57/64	1 5/8	8 1/4	1.20	1.60	1.80	2.20	**971H**
***971X**	9/16			63/64							***971X**
973H			1	1 1/64	1 7/8	9 1/8	1.60	2.20	2.40	3.00	**973H**
***974X**	5/8			1 5/64	2	9 1/2	1.80	2.50	2.70	3.40	***974X**
974H		7/8	1 1/8	1 5/32							**974H**
976H	3/4	1	1 1/4	1 9/32	2 1/4	10 3/8	2.30	3.10	3.44	4.24	**976H**
977N		1 1/8		1 13/32	2 1/2	10 7/8	2.60	3.50	3.90	4.80	**977N**
977X	7/8			1 15/32							**977X**
977P		1 1/4		1 17/32	2 1/2	10 7/8	2.60	3.50	3 90	4.80	**977P**
978P	1	1 3/8		1 21/32	2 3/4	11 3/8	3.20	4.10	4.80	5.70	**978P**
979X	1 1/8			1 27/32	3	11 7/8	4.20	5.20	6.30	7.30	**979X**
***980X**	1 1/4			2 1/32	3 5/16	12 1/2	5.60	6.90	8.40	9.70	***980X**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

OFFSET SOCKET WRENCHES
(*Carbon Steel*)

Unhardened are broached only.

Finished (New) are broached, surface smoothed, case-hardened and black enameled (baked on).

For Whitworth Standard, see page 178.

(*Continued on following page*)

No.	HEXAGON OPENINGS				Diam. of Head	Extreme Length, Approx.	Handle Offset from Face of Wrench	PRICE		
	For U. S. Standard Nut; Size Bolt	For Cap Screw; Diam. Screw	For S.A.E. Standard Screw and Nut	Broached Opening Across Flats				Unhardened	Finished (New)	No.
261A	1/8			21/64	1/2	3 3/8	**13/16**	$ .40	$ .60	**261A**
262D		3/16		25/64	5/8	3 7/8	1	.44	.66	**262D**
263A	3/16			27/64	11/16	4 5/16	**1 1/16**	.48	.72	**263A**
263D		1/4	1/4	29/64						**263D**
264A	1/4	5/16	5/16	33/64	3/4	5 1/8	**1 1/4**	.52	.78	**264A**
265D		3/8	3/8	37/64	7/8	5 7/8	**1 7/16**	.58	.88	**265D**
265A	5/16			39/64						**265A**
266D		7/16	7/16	41/64	1	6 1/4	1 9/16	.64	.96	**266D**
267A	3/8			45/64	1 1/8	6 3/4	1 5/8	72	1.08	**267A**
267D		1/2	1/2	49/64						**267D**
268A	7/16			51/64	1 1/4	7 1/2	1 13/16	.80	1.20	**268A**
268D		9/16		53/64						**268D**
269A	1/2	5/8,	9/16	57/64	1 3/8	8 3/8	2	.92	1.38	**269A**
270S			5/8	61/64						**270S**
270A	9/16			63/64	1 1/2	9 1/8	2 3/16	1.04	1.56	**270A**
270D		3/4	11/16	1 1/64						**270D**
271A	5/8		3/4	1 5/64	1 5/8	10	2 3/8	1.20	1.80	**271A**
271D		7/8		1 5/32						**271D**
273A	3/4	1	7/8	1 9/32	1 7/8	11 5/8	2 3/4	1.60	2.40	**273A**
274D		1 1/8		1 13/32	2	12 3/8	2 7/8	1.80	2.70	**274D**
275A	7/8		1	1 15/32	2 1/8	13 1/4	3 1/8	2.00	3.00	**275A**
275D		1 1/4		1 17/32						**275D**
276A	1	1 3/8	1 1/8	1 21/32	2 1/4	14 7/8	3 1/2	2.30	3.44	**276A**
277A	1 1/8		1 1/4	1 27/32	2 1/2	16 1/2	3 7/8	2.60	3.90	**277A**
278A	1 1/4		1 3/8	2 1/32	2 3/4	18 1/4	4 3/8	3.20	4.80	**278A**
279A	1 3/8		1 1/2	2 7/32	3	20	4 7/8	4.20	6.30	**279A**
280A	1 1/2			2 13/32	3 5/16	21 3/4	5 3/8	5.60	8.40	**280A**

Weights given page 184.

WILLIAMS
SUPERIOR-DROP-FORGED-TOOLS

OFFSET SOCKET WRENCHES
(Carbon Steel)

(Continued from previous page)

Special broaching to order in reasonable quantities.

Wrenches of shorter or longer lengths than stated in table can be furnished to order in quantities.

*Furnished from stock till supply is exhausted: thereafter only on special order.

No.	SQUARE OPENINGS				Diam. of Head	Extreme Length, Approx.	Handle Offset from Face of Wrench	PRICE		No.
	For Set Screw; Size	For Cap Screw; Diam. Screw	For U. S. Standard Nut; Size Bolt	Broached Opening				Unhardened	Finished (New)	
260H	1/8			1/8	5/16	2 3/4	9/16	$ .36	$ .54	**260H**
261H	3/16			13/64	1/2	3 3/8	13/16	.40	.60	**261H**
261J	1/4			17/64						**261J**
262H	5/16			21/64	5/8	3 7/8	1	.44	.66	**262H**
263H	3/8	1/4		25/64	11/16	4 5/16	1 1/16	.48	.72	**263H**
265H	7/16	5/16		29/64	7/8	5 7/8	1 7/16	.58	.88	**265H**
266H	1/2	3/8	1/4	33/64	1	6 1/4	1 9/16	64	.96	**266H**
267H	9/16	7/16		37/64	1 1/8	6 3/4	1 5/8	72	1.08	**267H**
***267X**			5/16	39/64						***267X**
268H	5/8	1/2		41/64	1 1/4	7 1/2	1 13/16	.80	1.20	**268H**
268P		9/16	3/8	45/64						**268P**
269H	3/4	5/8		49/64	1 3/8	8 3/8	2	.92	1.38	**269H**
***270X**			7/16	51/64	1 1/2	9 1/8	2 3/16	1.04	1.56	***270X**
271H	7/8	3/4	1/2	57/64	1 5/8	10	2 3/8	1.20	1.80	**271H**
***271X**			9/16	63/64						***271X**
273H	1			1 1/64	1 7/8	11 5/8	2 3/4	1.60	2.40	**273H**
274H	1 1/8	7/8		1 5/32	2	12 3/8	2 7/8	1.80	2.70	**274H**
***274X**			5/8	1 5/64						***274X**
276H	1 1/4	1	3/4	1 9/32	2 1/4	14 7/8	3 1/2	2.30	3.44	**276H**
277N		1 1/8		1 13/32	2 1/2	16 1/2	3 7/8	2.60	3.90	**277N**
277X			7/8	1 15/32						**277X**
277P		1 1/4		1 17/32						**277P**
278P		1 3/8	1	1 21/32	2 3/4	18 1/4	4 3/8	3.20	4.80	**278P**
279X			1 1/8	1 27/32	3	20	4 7/8	4.20	6.30	**279X**
***280X**			1 1/4	2 1/32	3 5/16	21 3/4	5 3/8	5.60	8.40	***280X**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SPARK PLUG WRENCHES
(Carbon-Steel)

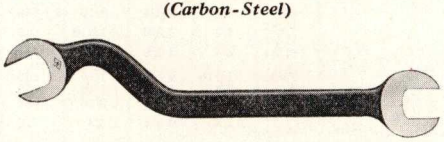
Designed for convenient service about automobiles, motor boats, gas engines, etc., and equally adaptable for use upon flush or depressed plugs.

Unfinished (New) are milled and broached, and case-hardened.

Finished (New) are milled and broached, surface and edges smoothed, case-hardened and black enameled (baked on)—head bright.

No.	Box End, Opening Broached	Open End, Opening Milled	Extreme Length, Approx.	PRICE		No.
				Unfinished (New)	Finished (New)	
993	7/8	9/16	8	$ .98	$ **1.16**	**993**
993A	15/16	11/16	8	.98	**1.16**	**993A**
994	1	3/4	8 1/2	1.20	**1.40**	**994**

"FORD" OFFSET REVERSE GEAR WRENCH
(Carbon-Steel)



Especially designed for adjusting Reverse Gear and Brakes.

Unfinished (New) are milled and case-hardened.

Finished (New) are milled, surface and edges smoothed, sizes stamped, case-hardened and black enameled (baked on)—heads bright.

No.	U. S. Standard Nuts; Size Bolts	Hex. Head Cap Screws; Diam. Screws	S. A. E. Standard Nuts; Size Bolts	Openings Milled	Extreme Length, Approx.	PRICE		No.
						Unfinished (New)	Finished (New)	
996	3/8	7/16	7/16	5/8 & 11/16	8 3/4	$ .90	$ **1.06**	**996**

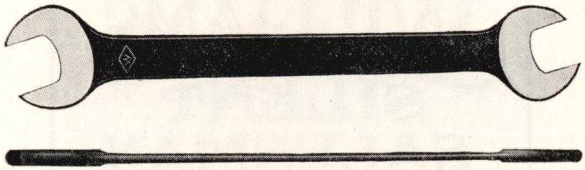
Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

TAPPET WRENCHES

(*Carbon Steel*)

15° Angle, Double Head



Long—Thin—Light

These long, light wrenches with thin heads and narrow jaws have been designed especially for tappet adjustment. Their length is ample to prevent burning the hands while working on tappets when the motor is hot. Made of Carbon Steel, they are amply strong for their intended purpose, but are not designed for heavy service.

Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

For Whitworth Standard and Metric Measure, see page 178.

No.	Openings Milled	U. S. Std. Nuts; Size Bolts	S. A. E. Std. Nuts; Size Bolts	Extreme Length Approx.	Thickness Heads	PRICE Each, Finished (New)
90A	3/8 & 7/16		1/4			
90B	13/32 & 1/2	3/16 & 1/4	5/16			
90	7/16 & 1/2	1/4	1/4 & 5/16			
90C	7/16 & 9/16		1/4 & 3/8	7	3/16	$ .84
90F	1/2 & 17/32	1/4	5/16			
90D	1/2 & 9/16	1/4	5/16 & 3/8			
90E	1/2 & 19/32	1/4 & 5/16	5/16			
92B	1/2 & 11/16	1/4 & 3/8	5/16			
92	9/16 & 5/8		3/8 & 7/16	8	7/32	1.00
92D	19/32 & 11/16	5/16 & 3/8				
92F	5/8 & 11/16	3/8	7/16			
94A	5/8 & 3/4		7/16 & 1/2			
94B	19/32 & 25/32	5/16 & 7/16				
94D	11/16 & 25/32	3/8 & 7/16		8	1/4	1.15
94F	11/16 & 7/8	3/8 & 1/2	9/16			
94G	3/4 & 13/16		1/2			
94	3/4 & 7/8	1/2	1/2 & 9/16			
96A	25/32 & 7/8	7/16 & 1/2	9/16			
96B	25/32 & 31/32	7/16 & 9/16				
96F	7/8 & 31/32	1/2 & 9/16	9/16	9 1/4	9/32	1.40
96H	7/8 & 1 1/16	1/2 & 5/8	9/16 & 3/4			
96	15/16 & 1		5/8 & 11/16			

Note—For Tappet Wrench "Silent Salesmen", see page 81; for Tappet Set, page 99.

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
SILENT SALESMAN
Adds to your Sales Force But NOT to Your Payroll
J.H. WILLIAMS & CO.
THE WRENCH PEOPLE

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DEALERS' "SILENT SALESMAN" DISPLAY BOARDS

FOR

SUPERIOR DROP-FORGED WRENCHES

It isn't always the salesman who talks most who sells most. Here are salesmen who "have the goods", but who let the latter speak for themselves. And they do.

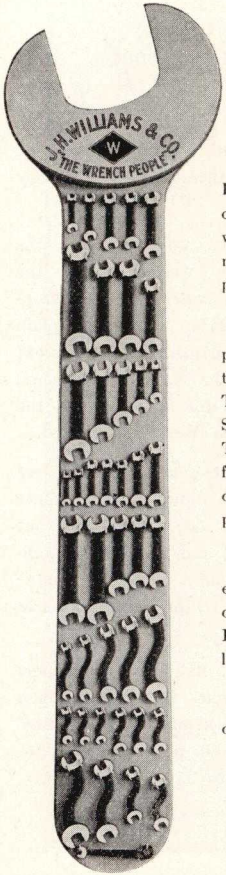
Customer after customer walks up to make the acquaintance of the "Silent Salesman" who looks, like the goods, worth looking at. Then Williams' Superior Drop-Forged Wrenches tell their own story. They're in plain sight, ready for examination—assortments of different styles and sizes, stamped to show the Nuts, Cap Screws, etc. they fit. The customer decides for himself upon the kind, also the size, and unhooks the Wrenches wanted.

Observe that up to this moment *you* have been free to attend to other matters. But now, the customer having made his selection, all you do is to make out the charge slip, or take the money, and the sale is completed. And this is repeated continually, day after day—that's where you profit, for *the Wrenches sell themselves* with practically no assistance.

Each Display Board is loaned, not sold, to dealers purchasing the assortment of Wrenches it displays, upon the condition that such board be used only for Williams' Wrenches For full details, see pages 74 to 91 (—"Superrench" Boards, pages 16 to 25).

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE L
(Carbon Steel Wrenches)



AUTOMOTIVE AND MACHINE SHOP ASSORTMENT

Weight of Board and 246 Wrenches, 142 lbs. Length 90 ins.

The moment a customer enters the store, this Board commands his attention; no wrench user can overlook it. It combines attractive display with handy wrench storage. The *extra* sales it makes will show good returns on the space occupied.

As will be seen from the table on opposite page, this assortment consists of five distinct patterns of Williams' Superior Drop-Forged Wrenches. They cover all popular sizes of U. S. and S. A. E. Standard Nuts and Cap Screws, as well as Valve Tappets. Four wrenches in the latter class care for every size of Tappet from 1/2 to 1 inch, inclusive, and will serve over 80% of all prominent passenger cars and trucks.

Williams' *Finished* (New) Wrenches are black enameled (baked on)—heads bright. Priced at the old *semi*-Finished list, they are the greatest Drop-Forged Wrench value ever offered as a standard line.

No charge for the Board to dealers who purchase the wrenches it displays.

Adds to your Salesforce
but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE L

(Carbon Steel Wrenches)

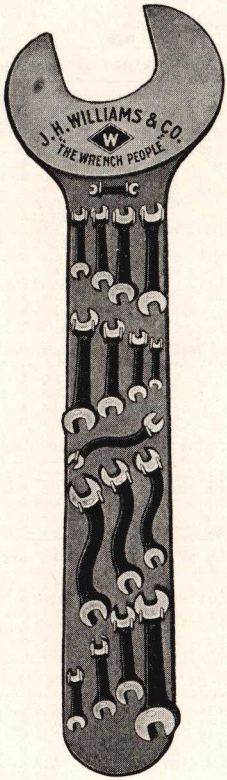
Adds to your Salesforce, but NOT to your Payroll

6 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S. A. E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
ENGINEERS' WRENCHES—15° Angle, Double Head							
721	1/8	1/8 & 3/16		5/16 & 3/8	4	1/4	$ .34
21	1/8 & 3/16	1/8		5/16 & 13/32	4	1/4	.34
723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	9/32	.42
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	.42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.62
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
29	3/8 & 7/16			11/16 & 25/32	7 1/2	3/8	.74
731		1/2 & 9/16	1/2	3/4 & 13/16	8 3/4	15/32	.90
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
31	7/16 & 1/2	5/8	9/16	25/32 & 7/8	8 3/4	15/32	.90
733	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	9 1/2	1/2	1.10
34	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	10 3/4	9/16	1.36
37	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	21/32	1.92
TAPPET WRENCHES—15° Angle, Double Head							
90D	1/4		5/16 & 3/8	1/2 & 9/16	7	3/16	$ .84
92F	3/8		7/16	5/8 & 11/16	8	7/32	1.00
94	1/2		1/2 & 9/16	3/4 & 7/8	8	1/4	1.15
96			5/8 & 11/16	15/16 & 1	9 1/4	9/32	1.40
TEXTILE MACHINE WRENCHES—22½° Angle, Double Head							
760Y	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	4 3/4	1/4	$ .50
761X	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 3/4	5/16	.62
761Z		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	5 3/4	5/16	.62
762Y		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.80
763Y	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 1/4	7/16	1.06
LIGHT SERVICE "S" WRENCHES—22½° Angle, Double Head							
75B		3/16 & 1/4	1/4	3/8 & 7/16	6 1/4	1/4	$ .54
77S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	7 1/4	9/32	.68
77B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	.68
79S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	8 1/4	5/16	.86
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	1.10
FLAT HANDLE "S" WRENCHES—22½° Angle, Double Head							
661D	1/8	1/8 & 3/16		5/16 & 3/8	4	9/32	$ .44
661E	1/8	1/8 & 1/4	1/4	5/16 & 7/16	4	9/32	.44
662D	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.58
662F	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5	5/16	.58
663E		3/8 & 1/2	3/8 & 1/2	9/16 & 3/4	6 1/4	3/8	.78
663A	5/16 & 3/8			19/32 & 11/16	6 1/4	3/8	.78
664B	7/16 & 1/2	5/8	9/16	25/32 & 7/8	7 1/2	7/16	1.06
665B	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	9	1/2	1.44
PRICE, Complete Wrench Assortment "L"							**$ 193.50**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE A
(Carbon Steel Wrenches)

AUTOMOTIVE ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE A
(Carbon Steel Wrenches)

AUTOMOTIVE ASSORTMENT

Length, 54 ins. Weight with 102 Wrenches, 45 lbs.

The Wrenches carried by this Board have been selected to meet adequately the needs of Automotive Supply Houses and Garages:—17 sizes of Double Head Wrenches, with openings milled for the most popular S. A. E. and U. S. Standard Nuts and Cap Screws.

No charge for the Board to dealers who purchase the wrenches it displays.

Finished (New) Wrenches are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

Adds to your Salesforce, but NOT to your Payroll

6 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
ENGINEERS' WRENCHES—15° Angle, Double Head							
21	1/8 & 3/16	1/8		5/16 & 13/32	4	1/4	$ .34
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	.42
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	.74
31	7/16 & 1/2	5/8	9/16	25/32 & 7/8	8 3/4	15/32	.90
CAP SCREW WRENCHES—15° Angle, Double Head							
721	1/8	1/8 & 3/16		5/16 & 3/8	4	1/4	$ .34
723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	9/32	.42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
731		1/2 & 9/16	1/2	3/4 & 13/16	8 3/4	15/32	.90
LIGHT SERVICE "S" WRENCHES—22½° Angle, Double Head							
75B		3/16 & 1/4	1/4	3/8 & 7/16	6 1/4	1/4	$ .54
77B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	.68
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	1.10

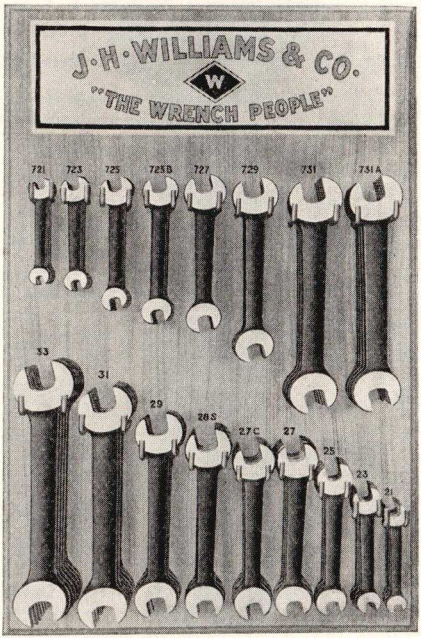
PRICE, Complete Wrench Assortment "A"..... $ 64.32

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"
(Carbon Steel Wrenches)

STYLE D

GENERAL ASSORTMENT



Adds to your Salesforce,
but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE D
(Carbon Steel Wrenches)

GENERAL ASSORTMENT

Size 15 x 24 in. Weight of Board and 102 Wrenches, 49 lbs.

A comprehensive assortment covering all popular U. S. and S. A. E. Standard Nuts and Cap Screws.

No charge for the Board to dealers who purchase the wrenches it displays.

Finished (New) Wrenches have smooth surface, black enameled (baked on) and are case-hardened; heads bright with sizes stamped thereon.

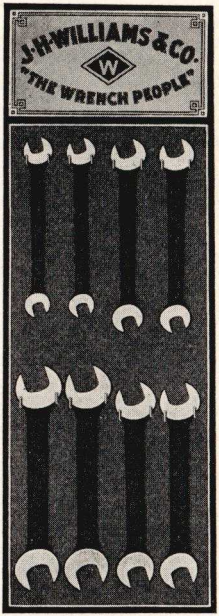
Adds to your Salesforce, but NOT to your Payroll

6 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
CAP SCREW WRENCHES—15° Angle—Top Row							
721	1/8	1/8 & 3/16		5/16 & 3/8	4	1/4	$ .34
723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	9/32	.42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
731		1/2 & 9/16	1/2	3/4 & 13/16	8 3/4	15/32	.90
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
ENGINEERS' WRENCHES—15° Angle—Bottom Row							
21	1/8 & 3/16	1/8		5/16 & 13/32	4	1/4	$ .34
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	.42
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.62
28S	7/16	7/16	7/16	5/8 & 25/32	7	3/8	.74
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	.74
31	7/16 & 1/2	5/8	9/16	25/32 & 7/8	8 3/4	15/32	.90
33	1/2 & 9/16	5/8	9/16	7/8 & 31/32	9 1/2	1/2	1.10
PRICE, Complete Wrench Assortment "D"							**$ 65.40**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMEN" Nos. 83 AND 86
(Carbon Steel Wrenches)

COMPLETE TAPPET ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMEN" Nos. 83 and 86
(Carbon Steel Wrenches)

COMPLETE TAPPET ASSORTMENT

Size Board, 8 1/2 x 28 in.

No. 83—24 Wrenches in 8 Sizes, 3 of Each—Weight 13 Lbs.
No. 86—48 Wrenches in 8 Sizes, 6 of Each—Weight 22 Lbs.

These assortments of carefully selected combinations of openings offer the most complete garage service in the smallest number of Wrench sizes obtainable. They cover every size tappet, from 7/16 to 1-1/16" and will care for all prominent cars and trucks.

No charge for the Board to purchasers taking either assortment of Wrenches specified.

"Silent Salesman" No. 83 carries the same assortment as No. 86 in table below, but with only 3 instead of 6 Wrenches of each size.

Finished (New) Wrenches are milled, surface and edges smoothed, sizes stamped, case-hardened and black enameled (baked on)—heads bright.

Adds to your Salesforce, but NOT to your Payroll

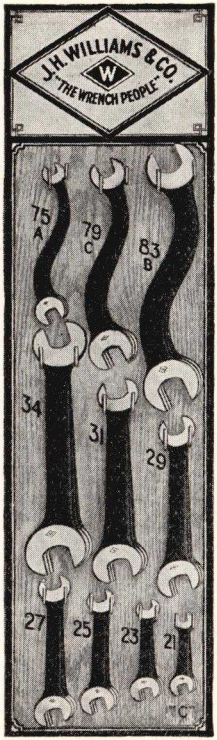
Board 86 6 Each Size, No.	Openings Milled	U. S. Standard Nuts; Size Bolts	S.A.E. Standard Nuts; Size Bolts	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
90	7/16 & 1/2	1/4	1/4 & 5/16	7	3/16	$ .84
90D	1/2 & 9/16	1/4	5/16 & 3/8	7	3/16	.84
92	9/16 & 5/8		3/8 & 7/16	8	7/32	1.00
92D	19/32 & 11/16	5/16 & 3/8		8	7/32	1.00
94A	5/8 & 3/4		7/16 & 1/2	8	1/4	1.15
94G	3/4 & 13/16		1/2	8	1/4	1.15
96	15/16 & 1		5/8 & 11/16	9 1/4	9/32	1.40
96H	7/8 & 1 1/16	1/2 & 5/8	9/16 & 3/4	9 1/4	9/32	1.40
No. 86 Assortment Complete—6 Wrenches each Size						$ 52.68
No. 83 Assortment Complete—3 Wrenches each Size						$ 26.34

NOTE—On pages 26 to 28 is shown a chart of cars and trucks served by these wrenches. "Superrench" Numbers are given by the chart. These are 1000 higher than those for corresponding sizes of carbon steel Wrenches above. Consequently, for *carbon* Tappet Wrench Number, deduct 1000 from "Superrench" Number. For instance, first item page 26 is "Ajax; (1) 1092D, (2) 1090D." Corresponding carbon Wrenches are Nos. 92D and 90D, respectively.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE C
(Carbon Steel Wrenches)

GENERAL ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE C
(Carbon Steel Wrenches)

GENERAL ASSORTMENT

Size Board, 8 1/2 x 28 in. Weight with 30 Wrenches, 16 lbs.

These Wrenches are generally required for Farm, Machine and Automotive purposes: 10 sizes of Double Head Wrenches, in 2 patterns, with openings milled for popular U. S. and S. A. E. Nuts and Hex Head Cap Screws.

No charge for the Board to dealers who purchase the wrenches it displays.

Finished (New) Wrenches are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

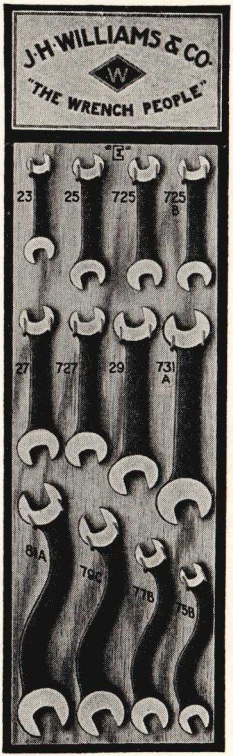
Adds to your Salesforce, but NOT to your Payroll.

3 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
LIGHT SERVICE "S" WRENCHES—22½° Angle, Double Head							
75A	1/4	3/16 & 5/16	5/16	3/8 & 1/2	6 1/4	1/4	$ .54
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
83B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	1.40
ENGINEERS' WRENCHES—15° Angle, Double Head							
21	1/8 & 3/16	1/8		5/16 & 13/32	4	1/4	$ .34
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	.42
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
29	3/8 & 7/16			11/16 & 25/32	7	3/8	.74
31	7/16 & 1/2	5/8	9/16	25/32 & 7/8	8 3/4	15/32	.90
34	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	10 3/4	9/16	1.36
PRICE, Complete Wrench Assortment "C"							$ 23.04

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE E
(Carbon Steel Wrenches)

GENERAL ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE E
(Carbon Steel Wrenches)

GENERAL ASSORTMENT

Size Board, 8 1/2 x 28 in. Weight with 36 Wrenches, 14 lbs.

This Board offers to dealers a most convenient and attractive device for the display and handy storage of Williams' Superior Drop-Forged Wrenches, generally required for Farm, Machine and Automotive purposes.

The Board's complement consists of 12 sizes of Wrenches (3 of each) with openings milled for popular U. S. and S. A. E. Standard Nuts and Cap Screws.

No charge for the Board to dealers who purchase the wrenches it displays.

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

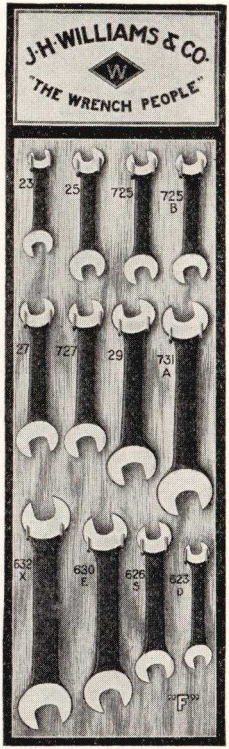
Adds to your Salesforce, but NOT to your Payroll

3 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
ENGINEERS' WRENCHES—15° Angle, Double Head							
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	$ .42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	.74
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
LIGHT SERVICE "S" WRENCHES—22½° Angle, Double Head							
75B		3/16 & 1/4		3/8 & 7/16	6 1/4	1/4	$ .54
77B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	.68
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	1.10
PRICE, Complete Wrench Assortment "E"							$ 23.94

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN" STYLE F
(Carbon Steel Wrenches)

GENERAL ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE F
(Carbon Steel Wrenches)

GENERAL ASSORTMENT

Size Board, 8 1/2 x 28 in. Weight with 36 Wrenches. 14 lbs.

This Board offers to dealers a most convenient and attractive device for the display and handy storage of Williams' Superior Drop-Forged Wrenches, generally required for Farm, Machine and Automotive purposes.

The Board's complement includes Check Nut or "Thin" Wrenches and consists of 12 sizes (3 of each) with openings milled for popular U. S. and S. A. E. Standard Nuts and Cap Screws.

No charge for the board to dealers who purchase the Wrenches it displays.

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

Adds to your Salesforce,
but NOT to your Payroll

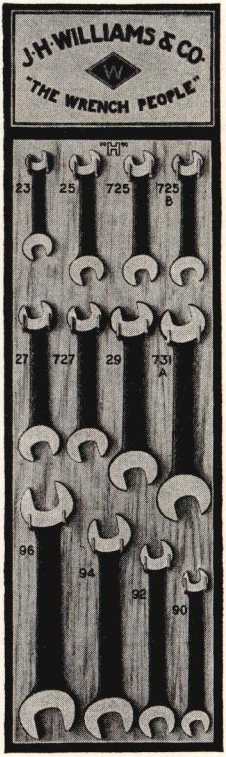
3 Each Size, No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S. A. E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
ENGINEERS' WRENCHES—15° Angle, Double Head							
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	$ .42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	.74
731A	1/2	1/2 & 5/8	1/2 & 9/15	3/4 & 7/8	8 3/4	15/32	.90
CHECK NUT or "THIN" WRENCHES—15° Angle, Double Head							
623D	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	4 3/4	1/8	$ .50
626S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	3/16	.64
630E	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	7 1/2	7/32	.80
632X		3/4	5/8 & 11/16	15/16 & 1	8 3/4	1/4	1.12
PRICE, Complete Wrench Assortment "F"							**$ 23.58**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE H

(Carbon Steel Wrenches)

AUTOMOTIVE ASSORTMENT
Including Tappet Selection



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE H
(Carbon Steel Wrenches)

AUTOMOTIVE ASSORTMENT
Including Tappet Selection

Size Board, 8 1/2 x 28 in. Weight with 36 Wrenches, 12 1/2 lbs.

This Board offers to dealers a most convenient and attractive device for the display and handy storage of Williams' Superior Drop-Forged Wrenches generally required for Automotive purposes, including one style for Tappet Adjustment.

Board contains 12 sizes of Wrenches (3 of each) with openings milled for popular U. S. and S. A. E. Standard Nuts and Cap Screws and Valve Tappets.

No charge for the Board to dealers who purchase the wrenches it displays.

Finished (New) wrenches are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

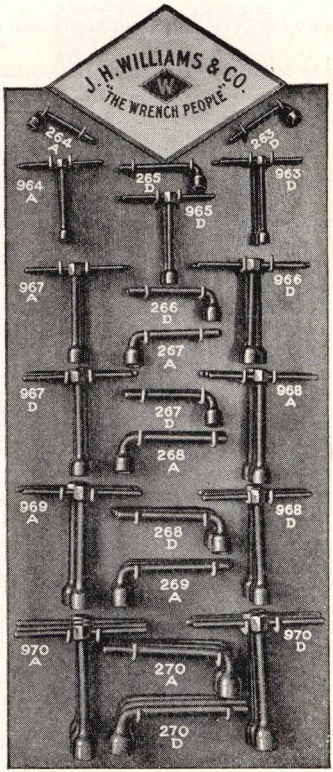
Adds to your Salesforce, but NOT to your Payroll

3 Each Size, No.	For U. S. Standard Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Standard Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
ENGINEERS' WRENCHES—15° Angle, Double Head							
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	$ .42
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	.50
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
29	3/8 & 7/16			11/16 & 25/32	7	3/8	.74
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
TAPPET WRENCHES—15° Angle, Double Head							
90D	1/4		5/16 & 3/8	1/2 & 9/16	7	3/16	$ .84
92F	3/8		7/16	5/8 & 11/16	8	7/32	1.00
94	1/2		1/2 & 9/16	3/4 & 7/8	8	1/4	1.15
96			5/8 & 11/16	15/16 & 1	9 1/4	9/32	1.40
PRICE, Complete Wrench Assortment "H"							$ 27.57

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE S
(Carbon Steel Wrenches)

SOCKET ASSORTMENT



Adds to your Salesforce, but NOT to your Payroll

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"SILENT SALESMAN"—STYLE S
(Carbon Steel Wrenches)

SOCKET ASSORTMENT

Size, 19 x 47 in. Weight of Board and 66 Wrenches, 40 lbs.

Eleven sizes of Single Head Socket Wrenches in each of two patterns, Offset and Straight with Pin Handle, for S. A. E. and U. S. Standard Hex. Nuts and Cap Screws.

No charge for the Board to dealers who purchase the wrenches it displays.

Adds to your Salesforce, but NOT to your Payroll.

3 Each Size, No.	HEXAGON OPENING: U. S. Standard Nut; Size Bolt	HEXAGON OPENING: Cap Screw; Dia. Screw	HEXAGON OPENING: S.A.E. Nut and Cap Screw; Size Bolt	Broached Opening, Size Across Flats	Diam. of Head	Extreme Length. Approx.	PRICE Each, Finished (New)	3 Each Size, No.
OFFSET PATTERN								
263D		1/4	1/4	29/64	11/16	4 5/16	$ .72	**263D**
264A	1/4	5/16	5/16	33/64	3/4	5 1/8	.78	**264A**
265D		3/8	3/8	37/64	7/8	5 7/8	.88	**265D**
266D		7/16	7/16	41/64	1	6 1/4	.96	**266D**
267A	3/8			45/64	1 1/8	6 3/4	1.08	**267A**
267D		1/2	1/2	49/64	1 1/8	6 3/4	1.08	**267D**
268A	7/16			51/64	1 1/4	7 1/2	1.20	**268A**
268D		9/16		53/64	1 1/4	7 1/2	1.20	**268D**
269A	1/2	5/8	9/16	57/64	3/8	8 3/8	1.38	**269A**
270A	9/16			63/64	1 1/2	9 1/8	1.56	**270A**
270D		3/4	11/16	1 1/64	1 1/2	9 1/8	1.56	**270D**
STRAIGHT PATTERN WITH PIN HANDLE								
963D		1/4	1/4	29/64	11/16	4 7/8	.98	**963D**
964A	1/4	5/16	5/16	33/64	3/4	5 1/4	1.04	**964A**
965D		3/8	3/8	37/64	7/8	5 3/4	1.16	**965D**
966D		7/16	7/16	41/64	1	6 1/8	1.26	**966D**
967A	3/8			45/64	1 1/8	6 1/2	1.42	**967A**
967D		1/2	1/2	49/64	1 1/8	6 1/2	1.42	**967D**
968A	7/16			51/64	1 1/4	7	1.54	**968A**
968D		9/16		53/64	1 1/4	7	1.54	**968D**
969A	1/2	5/8	9/16	57/64	1 3/8	7 3/8	1.74	**969A**
970A	9/16			63/64	1 1/2	7 7/8	1.96	**970A**
970D		3/4	11/16	1 1/64	1 1/2	7 7/8	1.96	**970D**
PRICE, Complete Wrench Assortment "S"							$ 85.26	

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ROLLS FOR WRENCH SETS

The Rolls used for Williams' Superior Drop-Forged Wrench Sets, shown on the following pages, are made of a fine grade of Olive Drab Twill and are bound and stitched around the edges. They are strong, durable and attractive.

A special buckle and web strap are provided, making Rolls absolutely secure when fastened and allowing no opportunity for the wrenches to fall out; a common occurrence when Rolls are fitted with the ordinary tie tape.

The pockets are of proper width and depth to protect the wrenches at all times.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(*Carbon-Steel*)
AUTOMOTIVE WRENCH SETS

No Duplication of Openings

No. 25

No. 4

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

AUTOMOTIVE SET No. 25

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	9/32	$ .42
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.62
28S	7/16	7/16	7/16	5/8 & 25/32	7	3/8	.74
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
33C		3/4	5/8 & 11/16	15/16 & 1	9 1/2	1/2	1.10
No. 25 Set List Price of Roll, $1.00 Extra							$ 4.28

AUTOMOTIVE EXTRA CAPACITY SET, "BIG SIX," No. 4

725	1/4	1/4 &5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	$ .50
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.62
28	5/16 & 7/16			19/32 & 25/32	7	3/8	.74
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
34	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	10 3/4	9/16	1.36
736	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4	12	21/32	1.92
No. 4 Set List Price of Roll, $1.00 Extra							$ 5.88

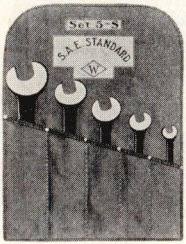
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(Carbon-Steel)

AUTOMOTIVE WRENCH SETS

With Openings for Popular
S. A. E. and U. S. Standard Nuts and Cap Screws

No. 2-S



No. 5-S

Finished (New) are milled surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

LIGHT AUTOMOTIVE SET No. 2-S

No.	For U. S. Std. Nuts; Size Bolt	For Hex. Head Cap Screws; Diam. Screw	For S.A.E. Std. Nuts and Cap Screws; Size Bolt	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
77S	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	7 1/4	9/32	$ .68
79S		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	8 1/4	5/16	.86
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	1.10
83A		3/4	5/8 & 11/16	15/16 & 1	10 3/8	7/16	1.40
85C	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	1/2	2.00
2-S Set	List Price of Roll, $1.00 Extra						$ 6.04

STANDARD AUTOMOTIVE SET No. 5-S

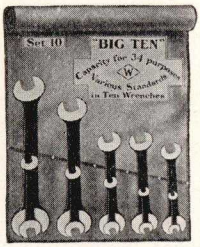
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	$ .50
727		3/8 & 7/16	3/8 & 7/16	9/16 & 5/8	6	11/32	.62
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
33C		3/4	5/8 & 11/16	15/16 & 1	9 1/2	1/2	1.10
37	5/8 & 3/4	1	3/4 & 7/8	1 1/16 & 1 1/4	12	21/32	1.92
5-S Set	List Price of Roll, $1.00 Extra.						$ 5.04

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(*Carbon-Steel*)
AUTOMOTIVE WRENCH SETS

No Duplication of Openings

No. 9



No. 10

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

AUTOMOTIVE SET, "DUPLEX," No. 9

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
725	1/4	1/4 & 5/16	1/4 & 5/16	7/16 & 1/2	5	5/16	$ .50
25	1/4 & 5/16	5/16	5/16	1/2 & 19/32	5 1/2	11/32	.50
27C	3/8	3/8	3/8	9/16 & 11/16	6 1/2	3/8	.62
28S	7/16	7/16	7/16	5/8 & 25/32	7	3/8	.74
731A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	8 3/4	15/32	.90
34	1/2 & 5/8	5/8	9/16 & 3/4	7/8 & 1 1/16	10 3/4	9/16	1.36
736	3/4	3/4 & 1	11/16 & 7/8	1 & 1 1/4	12	21/32	1.92
No. 9 Set List Price of Roll, $1.25 extra							$ 6.54

EXTRA CAPACITY GARAGE SET, "BIG TEN," No. 10

721	1/8	1/8 & 3/16		5/16 & 3/8	4	1/4	$ .34
23	3/16 & 1/4	5/16	5/16	13/32 & 1/2	4 5/8	5/16	.42
725A		1/4 & 3/8	1/4 & 3/8	7/16 & 9/16	5	5/16	.50
27	5/16 & 3/8			19/32 & 11/16	6 1/2	3/8	.62
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
731B	1/2	9/16 & 5/8	9/16	13/16 & 7/8	8 3/4	15/32	.90
32	7/16 & 9/16			25/32 & 31/32	9 1/2	1/2	1.10
33C		3/4	5/8 & 11/16	15/16 & 1	9 1/2	1/2	1.10
737	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4	12	21/32	1.92
38	5/8 & 7/8		3/4 & 1	1 1/16 & 1 7/16	13 1/2	23/32	2.80
No. 10 Set List Price of Roll, $1.75 extra							$10.44

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCH SETS
(Carbon-Steel)

For Light Service Only

No. 1

No. 3

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

SET No. 1

No.	For Manufacturers' Std. Nuts; Size Bolts	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
75	3/16 & 1/4	3/16 & 1/4	5/16	5/16	13/32 & 1/2	6 1/4	1/4	$ .54
77	1/4 & 5/16	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8	7 1/4	9/32	.68
79	5/16 & 3/8	3/8	7/16	7/16	5/8 & 11/16	8 1/4	5/16	.86
81	3/8 & 7/16	3/8			11/16 & 27/32	9 1/4	3/8	1.10
83	7/16 & 1/2			5/8	27/32 & 15/16	10 3/8	7/16	1.40

No. 1 Set List Price of Roll, $ .80 Extra — $ 4.58

SET No. 3

No.	For U. S. Std. Nuts; Size Bolts	For Hex Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
75B		3/16 & 1/4	1/4	3/8 & 7/16	6 1/4	1/4	$ .54
77B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	7 1/4	9/32	.68
79	3/8	7/16	7/16	5/8 & 11/16	8 1/4	5/16	.86
81B		1/2 & 9/16	1/2	3/4 & 13/16	9 1/4	3/8	1.10
83B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	1.40
85B	3/4	7/8 & 1	7/8	1 1/8 & 1 1/4	12	1/2	2.00

No. 3 Set List Price of Roll, $1.00 extra — $ 6.58

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCH SETS
(Carbon Steel)

For Light Service Only

"Utility Five"

"Utility Three"

The Wrenches in these Utility Sets are especially adapted for use on carriages, wagons and agricultural implements.

Finished (New) are milled, surface smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

"UTILITY FIVE" SET, No. 6

No.	For U. S. Std. Nuts; Size Bolts	For Hex. Head Cap Screws; Diam. Screws	For S.A.E. Std. Nuts and Cap Screws; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
75A		3/16 & 5/16	5/16	3/8 & 1/2	6 1/4	1/4	$ .54
77	1/4	5/16 & 7/16	5/16 & 7/16	1/2 & 5/8	7 1/4	9/32	.68
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
81A	1/2	1/2 & 5/8	1/2 & 9/16	3/4 & 7/8	9 1/4	3/8	1.10
83B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	1.40
No. 6 Set	List Price of Roll, $ .80 extra						$ 4.58

"UTILITY THREE" SET, No. 26

75A		3/16 & 5/16	5/16	3/8 & 1/2	6 1/4	1/4	$ .54
79C		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	8 1/4	5/16	.86
83B	1/2	5/8 & 3/4	9/16 & 11/16	7/8 & 1	10 3/8	7/16	1.40
No. 26 Set	List Price of Roll, $ .50 extra						$ 2.80

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCH SETS
(*Carbon Steel*)

Metric No. 15

Whitworth No. 101

Finished (New) Wrenches are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

METRIC SET No. 15

For complete list of Metric Measure openings see pages 177 to 180.

Number	Openings Milled, m/m	Extreme Length, m/m	Thickness Heads, m/m	PRICE Each, Finished (New)	Number
M23	10 & 12	118	7.9	$ .42	**M23**
M27	14 & 16	165	9.5	.62	**M27**
M29	18 & 20	190	10.3	.74	**M29**
M32	22 & 25	241	12.7	1.10	**M32**
M36	28 & 30	305	16.7	1.92	**M36**
No. 15 Set	List Price of Roll, $1.00 extra			$ 4.80	

WHITWORTH "LIGHT SERVICE" SET No. 101

For complete list of Whitworth Standard Millings see pages 177 to 180.

No.	For Whitworth Standard Nuts; Size Bolts	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)	No.
W75	3/16 & 1/4	29/64 & 17/32	6 1/4	1/4	$ .54	**W75**
W77D	1/4 & 5/16	17/32 & 39/64	7 1/4	9/32	.68	**W77D**
W79D	5/16 & 3/8	39/64 & 23/32	8 1/4	5/16	.86	**W79D**
W81F	3/8 & 7/16	23/32 & 53/64	9 1/4	3/8	1.10	**W81F**
W83E	7/16 & 1/2	53/64 & 59/64	10 3/8	7/16	1.40	**W83E**
No. 101 Set	List Price of Roll, $ .80 extra				$ 4.58	**No. 101**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(Carbon-Steel)

TAPPET WRENCH SET No. 63

This selection of 6 Wrenches includes 2 each of 3 sizes. It offers the most comprehensive service for tappet adjustment as it covers every tappet size from ½ to 7/8 in. Since it will care for 80% of all passengers cars and trucks, it is a most desirable Set for every automobile mechanic.

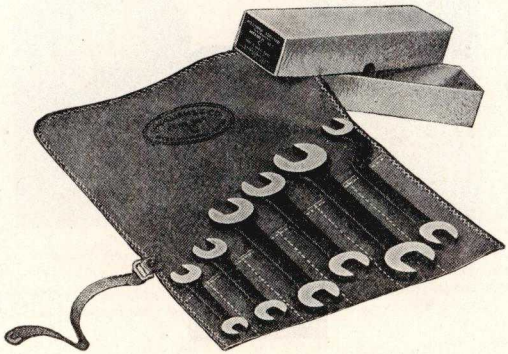
Finished (New) are milled, surface and edges smoothed, sizes stamped on heads, case-hardened and black enameled (baked on)—heads bright.

No.	Openings Milled	U. S. Standard Nuts; Size Bolts	S.A.E. Standard Nuts; Size Bolts	Extreme Length Approx.	Thickness Heads	PRICE Each, Finished (New)
90D	1/2 & 9/16	1/4	5/16 & 3/8	7	3/16	$ .84
90D	1/2 & 9/16	1/4	5/16 & 3/8	7	3/16	.84
92F	5/8 & 11/16	3/8	7/16	8	7/32	1.00
92F	5/8 & 11/16	3/8	7/16	8	7/32	1.00
94	3/4 & 7/8	1/2	1/2 & 9/16	8	1/4	1.15
94	3/4 & 7/8	1/2	1/2 & 9/16	8	1/4	1.15
o. 63 SET	List Price of Roll, $ .50 extra.					$ 5.98

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(Carbon Steel)

"FORD" WRENCH SET C



Ford owners cannot afford to be without this set of Williams' Superior Drop-Forged Wrenches. Set consists of 6 Wrenches, 12 openings, and will care for every nut on Ford cars.

The thin offset Reverse Gear Wrench is specially designed for adjusting reverse gear and brakes.

Packed in canvas roll, and strong cardboard box attractively labeled.

When ordered in lots of six complete sets an attractive display Carton will be furnished. See opposite page for description.

Finished (New) are milled, surface smoothed, sizes stamped on heads, case hardened and black enameled (baked on) heads bright.

No.	For U. S. Standard Nuts; Size Bolt	For Hex. Head Cap Screws; Diam. Screw	For S.A.E. Standard Nuts and Cap Screws; Size Bolt	Openings Milled	Extreme Length, Approx.	Thickness Heads	PRICE Each, Finished (New)
29	3/8 & 7/16			11/16 & 25/32	7 1/2	13/32	$ .74
33A	1/2	5/8	9/16 & 5/8	7/8 & 15/16	9 1/2	1/2	1.10
723		3/16 & 1/4	1/4	3/8 & 7/16	4 1/4	9/32	.42
725B	1/4	5/16 & 3/8	5/16 & 3/8	1/2 & 9/16	5 1/2	11/32	.50
729		7/16 & 1/2	7/16 & 1/2	5/8 & 3/4	7	3/8	.74
996	3/8	7/16	7/16	5/8 & 11/16	8 3/4	5/16	1.06
Set C	List Price of Roll, $ .90 extra						$ 4.56

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED
(Carbon Steel)

"FORD" WRENCH SETS C

IN CARTONS

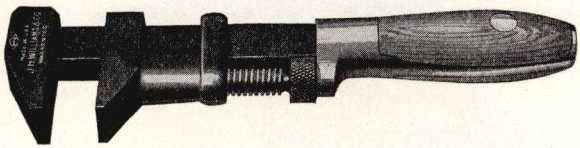
For the display of Williams' Superior "Ford" Wrench Sets C, when ordered in lots of 6 complete Sets, a Carton will be furnished free.

These Cartons are attractively lithographed in 3 colors and are for use on counters, or in window displays.

For description of "Ford" Set C, see opposite page.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"W & B"
MACHINISTS' KNIFE HANDLE WRENCHES



The "W & B" Machinists' Knife Handle Wrench, with the exception of the handle, which is of selected beech, is the same in materials, workmanship and price as the "Railroad Special", described on opposite page. It is absolutely dependable.

Where a quality-tool is required, it is strongly recommended for use in machine and erecting shops, on all assembly work, and for the tool box of automobiles, trucks and tractors.

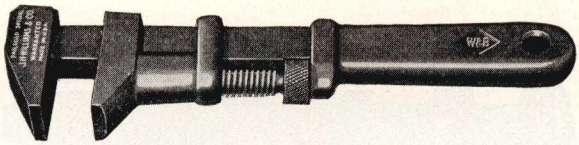
Each Wrench is wrapped in anti-rust paper.

Every Wrench is guaranteed against defective material and workmanship.

No. and Size, Inches	Capacity	Case Specifications			PRICE, per Dozen	No. and Size, Inches
		Quantity Wrenches	Net and Gross Wgt. Lbs.	Measurement		
6	1	72	55— 67	26 x 9 x 9	$ 15.00	**6**
8	1 1/2	72	102—122	30 x 11 x 9	18.00	**8**
10	1 7/8	72	171—209	34 x 13 x 10	22.00	**10**
12	2 1/4	72	225—257	37 x 15 x 12	28.00	**12**
15	2 13/16	48	224—262	30 x 18 x 12	38.00	**15**
18	3	24	171—202	23 x 16 x 14	48.00	**18**
21	3 15/16	12	114—135	25 x 16 x 9	58.00	**21**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

W & B
*"RAILROAD SPECIAL" WRENCHES



W & B "Railroad Special" Wrenches were designed for the hardest kind of work and in the years they have been used by thousands of mechanics, both in the railroad and other fields, have won the distinction of being the most durable screw wrench made.

The head and bar are drop-forged in one piece from selected steel and case-hardened; the extra heavy jaw is oil-hardened. Fitted with indestructible iron handle and accurately threaded, solid steel screw, adjustment is always easy.

Each Wrench is wrapped in anti-rust paper.

Every Wrench is guaranteed against defective material and workmanship.

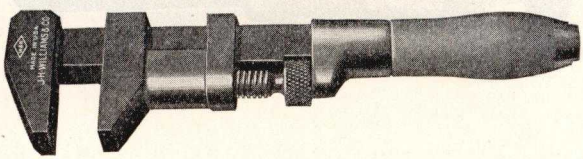
No. and Size, Inches	Capacity	Case Specifications			PRICE, per Dozen	No. and Size, Inches
		Quantity Wrenches	Net and Gross Weight Lbs.	Measurement		
6	1	72	56— 63	14 x 9 x 9	$ 15.00	**6**
8	1 1/2	72	102—115	17 x 10 x 10	18.00	**8**
10	1 7/8	72	168—186	26 x 12 x 9	22.00	**10**
12	2 1/4	72	228—250	29 x 14 x 8	28.00	**12**
15	2 13/16	48	231—251	23 x 17 x 9	38.00	**15**
18	3	24	172—190	22 x 13 x 10	48.00	**18**
21	3 15/16	12	115—135	25 x 16 x 9	58.00	**21**

*REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"W & B"

AGRICULTURAL WRENCHES



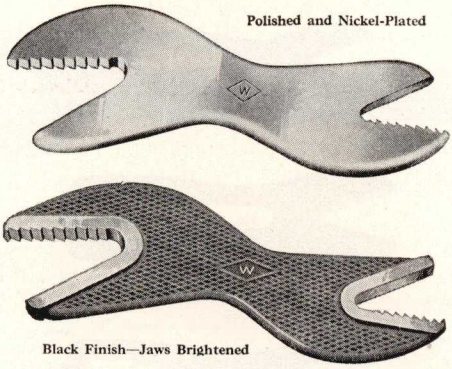
These Wrenches were designed to meet the demand for a good tool at moderate price; they should not be confused with the cheap upset wrench of unreliable type.

The Head and Bar are drop-forged in one piece. Fitted with easy-acting, solid steel Screw and thoroughly seasoned hardwood handle. Each Wrench is wrapped in oiled paper, six wrenches to a package.

No. and Size, Inches	Capacity	Case Specifications			PRICE per Dozen	No. and Size, Inches
		Quantity Wrenches	Net and Gross Weight, Lbs.	Measurement		
6	29/32	72	53– 60	14 x 9 x 9	$ 10.00	**6**
8	1 5/16	72	97–110	17 x 11 x 10	12.00	**8**
10	1 11/16	72	136–155	26 x 12 x 8	14.00	**10**
12	1 7/8	72	174–198	27 x 14 x 9	18.00	**12**
15	2 7/16	48	160–180	21 x 17 x 9	24.00	**15**

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"ALWAYS READY" WRENCHES

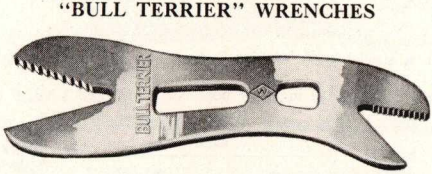


Drop-forged from a special grade of high carbon steel and tempered in oil.

Packed; six in paper box. When ordering specify whether Nickel Plated or Black Finish is desired. Unless otherwise specified, Nickel-Plated will be furnished.

No.	Extreme Length	Holds Squares or Rounds	Nickel-Plated		Black Finish		No.
			Weight Per Doz. Lbs.	PRICE Each	Weight Per Doz. Lbs.	PRICE Each	
1	5	1/4 to 3/4	5.2	$ .45	5.5	$ .40	1
2	7	1/4 to 1 1/4	10.3	.60	9.7	.55	2
2 1/2	9 1/2	1/4 to 1 3/4	26.3	.90	20.3	.85	2 1/2
3	11 1/2	3/4 to 2	29.6	1.35	28.1	1.25	3

"BULL TERRIER" WRENCHES



Length 5 1/2 inches. Holds Pipe 1/8 to 3/8; Rounds, 1/4 to 3/4 inch. Jaws are oil tempered and entire Wrench is polished and oiled.

Packed; 6 Wrenches in paper box; weight per dozen, 3 3/4 lbs.

PRICE, each ..... $ .55

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"BULL DOG" WRENCHES

No. 0—Pocket Size

No. 1

No. 1 1/2

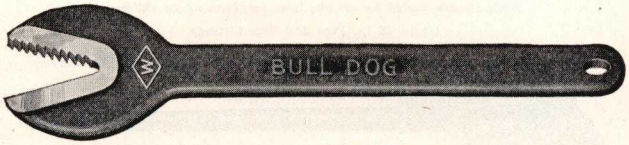
No. 1 3/4

Made from a special grade of high carbon steel and tempered in oil.

Packed: Nos. 0 and 1, 12 in paper box; Nos. 1 1/2 and 1 3/4, 6 in box.

No.	Extreme Length	Capacity		Weight per Doz. Lbs.	PRICE Each
		Pipe	Rounds		
0	4	1/8 to 1/4	1/4 to 9/16	.9	$ .25
1	5 3/4	1/8 to 3/8	1/4 to 3/4	3.1	.35
1 1/2	5 3/4	1/8 to 3/8	3/8 to 3/4	3.4	.50
1 3/4	7	1/8 to 3/4	3/8 to 1 1/8	7.6	.75

"BULL DOG" WRENCHES



Drop-forged from a special grade of high carbon steel and tempered in oil.
The handles of Nos. 2 and 2 1/2 are concave.
No. 2 packed six in paper box.

No.	Extreme Length, Approx.	Capacity		Weight per Doz. Lbs.	PRICE, Each
		Pipe	Rounds		
2	9	3/8 to 3/4	1/2 to 1	9.2	$ 1.00
2 1/2	12 1/2	3/8 to 1	5/8 to 1 1/4	17.3	1.50
3	16	1/2 to 1 1/4	3/4 to 1 3/8	36.3	2.00
3 1/2	18 3/4	1/2 to 1 1/2	3/4 to 1 3/4	43.5	2.50
4	22	1 1/4 to 2	1 1/2 to 2 1/2	83.	3.00
4 1/2	24	1 1/4 to 2 1/2	1 5/8 to 3	120.5	4.00
5	27	2 to 3	2 1/4 to 3 1/2	156.5	5.00

"BULL DOG" WRENCHES
TWIN PATTERN

Drop-forged from a special grade of high carbon steel and tempered in oil.
Packed; 6 in paper box.

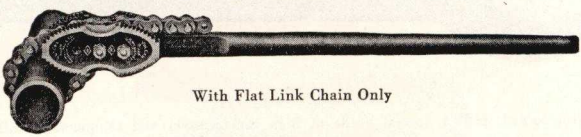
No.	Extreme Length, Approx.	Capacity		Weight per Doz. Lbs.	PRICE, Each
		Pipe	Rounds		
Twin	10	1/8 to 3/4	5/16 to 1	14	$ 1.50

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

IMPROVED "VULCAN" DROP-FORGED CHAIN PIPE TONGS

With Double-Ended Reversible Jaws for Turning or Holding

1/8 to 18 in. Pipe and Pipe-Fittings



With Flat Link Chain Only

Trade mark "Vulcan," registered in Great Britain, France, Germany, Russia, Austria, Hungary, Belgium, Denmark, Sweden, Australia, New Zealand, the U. S. A. and elsewhere.

Improved "Vulcan" Tongs combine the merits of all other chain pipe tongs with special advantages of their own. They are wholly made from wrought steel and are fully guaranteed.

The Double-Ended, Reversible Jaws, which may be quickly changed end for end as teeth first in use wear, greatly extend the life of the tongs and assure the service of "*two tools at the price of one.*"

The fastening of Jaws to handle with two unusually tough steel studs makes repairs possible in emergencies and insures uninterrupted service; one stud will withstand full working strength of tool, when necessary.

The "straight-cut" teeth provide thorough distribution of gripping pressure; the tearing of pipe and one-spot wear of teeth is therefore wholly prevented.

All parts are interchangeable and replacements are carried in stock. With extra chains, swinging links are furnished.

(*Continued on next page*)

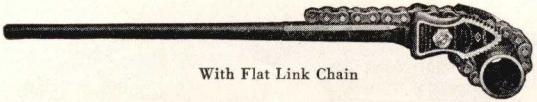
Number	30	31	32	33	33 1/2	34	35	*15 1/2	*16
***Capacity** Size Pipe	1/8 to 3/4	1/8 to 1 1/2	1/4 to 2 1/2	3/4 to 4	1 to 6	1 1/2 to 8	2 to 12	4 to 16	4 to 18
Extreme Length	13 3/4	20	27	37	44 1/2	50 1/2	64 1/2	85	87
Weight, lbs.	1 3/4	5 3/4	10	16	24	31	50	98	137
Flat Link Chain									
Length	9 1/2	13 1/2	17 1/2	22 1/2	32	40 1/2	55 1/2	68	74 1/2
Breaking Strain, lbs.	3,600	6,700	9,800	12,500	14,300	15,700	21,800	30,000	40,000
Price									
Complete	$ 5.00	$ 7.00	$ 10.00	$ 14.00	$ 18.00	$ 22.00	$ 36.00	$ 60.00	$ 80.00
Extra Chain	1.50	2.00	3.00	5.00	7.00	9.00	15.00	30.00	40.00
Extra Jaws, pair	2.00	3.50	5.50	8.00	9.50	11.00	15.00	24.00	32.00
Extra Jaw Nuts and Studs, per set	.40	.50	.70	.90	1.10	1.40	1.80		

*Tongs for pipe sizes larger than 12 inches are supplied only in the non-reversible jaw form.

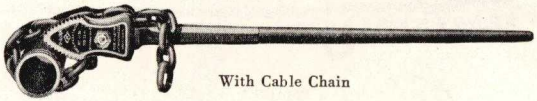
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

GENUINE "VULCAN" DROP-FORGED CHAIN PIPE TONGS

For Turning or Holding 1/8 to 18 in. Pipe and Pipe-Fittings



With Flat Link Chain



With Cable Chain

Trademark "Vulcan", registered in Great Britain, France, Germany, Russia, Austria, Hungary, Belgium, Denmark, Sweden, Australia, New Zealand, the U. S. A. and elsewhere.

(*Continued from opposite page*)

The Chains, for both the Improved and Old Style Patterns swing from the center and can be used on either side of the jaws, thus reducing to the minimum the wear upon specific teeth.

Proof-testing. To insure proper service, each Flat Link Chain is "*proof-tested*" in a standard tension machine up *to two-thirds of its breaking strain* listed in table. Each Chain, so tested, is stamped **O** on the drop-forged swinging link and to it is attached a leaden seal bearing our trademark Ⓦ thus absolutely establishing the safety-factor and reliability of every tongs.

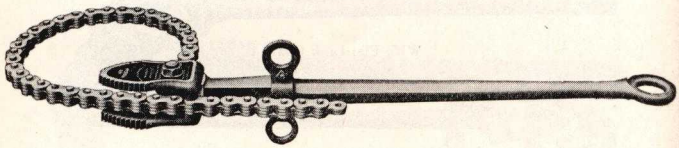
The merits of the "Old Style" "Vulcan" with single-ended, non-reversible jaws, still commend it to those with whom its efficiency has been long established. The jaws are fastened to the handle by extra size through Bolt and U. S. Standard Nut.

Number	10	11	12	13	13 1/2	14	15	15 1/2	16
Capacity Size Pipe	1/8 to 3/4	1/8 to 1 1/2	1/4 to 2 1/2	3/4 to 4	1 to 6	1 1/2 to 8	2 to 12	4 to 16	4 to 18
Extreme Length	13 3/4	20	27	37	44 1/2	50 1/2	64 1/2	85	87
Weight	1 3/4	5 3/4	10	16	24	31	50	98	137
Flat Link Chain Length	9 1/2	13 1/2	17 1/2	22 1/2	32	40 1/2	55 1/2	68	74 1/2
Breaking Strain, lbs.	3,600	6,700	9,800	12,500	14,300	15,700	21,800	30,000	40,000
Cable Chain Length	9 3/4	14 1/2	18	27	33 1/2	42	57	67	76
Breaking Strain, lbs.	1,200	4,000	6,000	10,500	12,500	15,000	19,000	28,000	40,000
Price Complete	**$ 5.00**	**$ 7.00**	**$10.00**	**$14.00**	**$18.00**	**$22.00**	**$36.00**	**$60.00**	**$80.00**
Extra Chain	1.50	2.00	3.00	5.00	7.00	9.00	15.00	30.00	40.00
Extra Jaws, pair	2.00	3.50	5.50	8.00	9.50	11.00	15.00	24.00	32.00
Extra Bolt and Nut, per set	.28	.36	.46	.60	.70	.90	1.30	1.75	2.50

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

GENUINE "VULCAN"

DROP-FORGED BREAK-OUT TONGS



"MAUD"

The Genuine Williams "Vulcan" Break-Out Tongs, known to a great host of drillers as "Maud," has been their favorite for nearly a quarter of a century. It is a powerful tool of rugged strength and is fully guaranteed. "Maud" was always efficient and dependable, but several improvements provide increased strength and convenience.

The Handle, short and sturdy, is made of a special stiff steel which is so distributed as to utilize its weight to greatest advantage.

The Jaws are fastened with an extra size through bolt and U. S. Standard nut; they can't work loose, or spread.

The Large Swinging Link which connects the chain with the through bolt, is drop-forged from a fine grade of Chrome Vanadium Steel and is heat-treated.

Suspension Clamp is provided, as illustrated, and an eye of ample size is forged on the end of the handle.

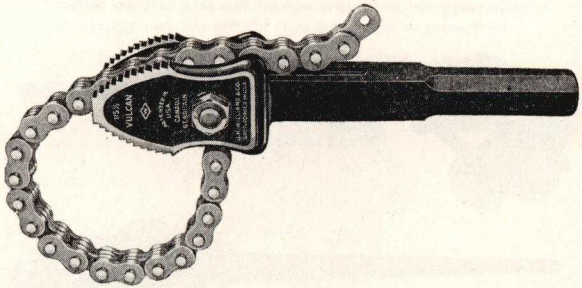
Proof-Testing. Each "Vulcan" Break-Out Chain is individually "proof-tested" on a standard tension machine *to two-thirds of its breaking strain.* Each chain so tested is stamped **O** on the drop-forged swinging-link and to it is attached a leaden seal, bearing our trade mark

Every Flat Link Chain leaving our works *MUST* bear this mark and seal—the Proof of Quality—as evidence that it has passed our standardized proof-tests.

No.	Capacity, Size Pipe	Extreme Length	Weight, Lbs.	Flat Link Chain		PRICE		
				Length	Breaking Strain, Lbs.	Extra Chain, Each	Extra Jaws, Pair	Tongs Each, Complete
16B	4 to 18	63	136	74 1/2	40,000	$ 40.00	$ 32.00	$ 100.00

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

GENUINE "VULCAN" DROP-FORGED BACK-UP TONGS



Genuine Williams' "Vulcan" Back-Up Tongs are designed for use on any tool joint, up to and including the maximum size. They offer to Rotary Drillers tools handy to operate and absolutely dependable under the hardest conditions of service. They are by far the most satisfactory and economical tongs for back-up work on the market. Like all *Genuine* "Vulcans", they are fully guaranteed.

A New and Sturdier Size "Vulcan", No. 115 1/2, as listed below, can now be furnished. Short, light in weight—*the* tongs for tool joints.

In No. 115 the first five sets of chain links are heavier than the remainder of the chain. In new No. 115 1/2 all links are of large size throughout and give the same bearing on tool joints as the five sets of enlarged links of No. 115 tongs.

The Handle, short and stubby, is of just the right length for the rotary.

The Through Bolt and U. S. Standard Nut for fastening the jaws, are of extra size and prevent them from spreading, or working loose.

Proof-Testing. Each Chain is individually "proof-tested" on a standard tension machine *to two-thirds of its breaking strain.* Every chain so tested is stamped O on the drop-forged swinging-link and to it is attached a leaden seal, bearing our trade mark ⟨W⟩. Every Flat Link Chain leaving our works *must* bear this mark and seal—the proof of Quality—as evidence that it has passed our standardized proof-tests.

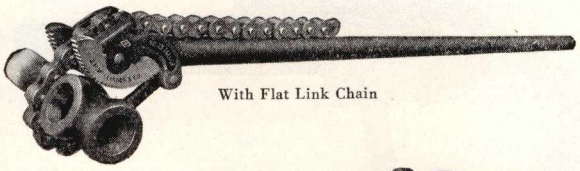
Longer chains for larger sizes of casing can be supplied when required.

No.	Capacity	Extreme Length	Weight, Lbs.	Flat Link Chain		PRICE		
				Length	Breaking Strain, Lbs.	Extra Chain, Each	Extra Jaws, Pair	Tongs Each, Complete
115	7 3/4	26	37	38 1/2	21,800	$ 18.00	$ 15.00	**$ 36.00**
115 1/2	7 3/4	26	51	40	30,000	20.00	24.00	**50.00**

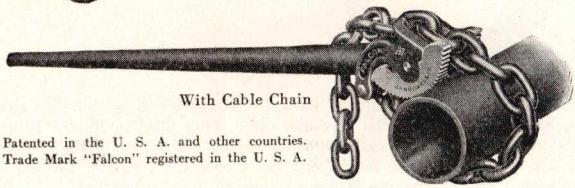
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"FALCON"
DROP-FORGED CHAIN PIPE AND FITTINGS TONGS

With Single Jaw and Interchangeable Flat Link, or Cable Chain, for Turning or Holding 1/8 to 12 in. Pipe and Pipe Fittings.



With Flat Link Chain



With Cable Chain

Patented in the U. S. A. and other countries.
Trade Mark "Falcon" registered in the U. S. A.

The "Falcon" is unsurpassed for use in close quarters and is particularly serviceable on coils, etc., where clearance is limited. Continuous teeth across the solid, central portion of the jaw give an exceptionally efficient grip on fittings.

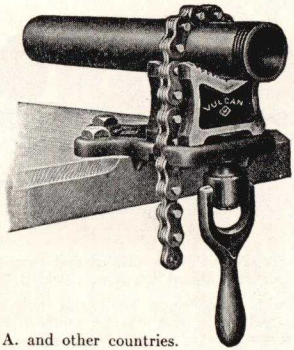
Made entirely of wrought steel. The removable Jaw is reversible, end for end, as the teeth first in use wear, and is tempered for file-sharpening. The proof-tested, certified Chains are of the same quality as those of our "Vulcan" Tongs; all parts are interchangeable and replacements are carried in stock.

Number	41	42	43	43 1/2	44	45
Capacity						
Fittings	1/8 to 1 1/2	1/4 to 2 1/2	3/4 to 4	1 to 6	1 1/2 to 8	2 to 12
Extreme Length	20	27	37	44 1/2	50 1/2	64 1/2
Approx. Wgt., lbs.	5	10	15	23	31	53
Flat Link Chain						
Length, approx.	14 1/2	19	26	33	42 1/2	57 1/2
Breaking Strain, lbs.	6,700	9,800	12,500	14,300	15,700	21,800
Cable Chain						
Length	15	19	28	36	43 1/2	58 1/2
Size Iron	9/32	11/32	7/16	15/32	33/64	37/64
Breaking Strain, lbs	4,000	6,000	10,500	12,500	15,000	19,000
Price						
Complete	**$ 7.00**	**$ 10.00**	**$ 14.00**	**$ 18.00**	**$ 22.00**	**$ 36.00**
Extra Chain	2.00	3.00	5.00	7.00	9.00	15.00
Extra Jaws, each	3.50	5.50	8.00	9.50	11.00	15.00

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

GENUINE "VULCAN" DROP-FORGED CHAIN PIPE VISE

For Holding Pipe, Bolts, Bars, Shafts, etc., from 1/8 to 8 inches in Diameter



Patented in U. S. A. and other countries.

Trademark "Vulcan," registered in Great Britain, France, Germany, Russia, Austria, Hungary, Belgium, Denmark, Sweden, Australia, New Zealand and the U. S. A.

These Vises are unbreakable, compact, rapid in action and positive in gripping pipe. All are equally serviceable upon and suitable for fastening to bench or post. The smaller sizes are well adapted for carrying by hand or in tool bag.

Adjustment is quickly effected by engaging the projecting rivets of the chain with a series of stepped bosses on the base, when the vise may be instantly locked in an unbreakable grip by a turn of the handle.

They are made entirely of wrought steel; the drop-forged jaws are of saw-tempered steel for file-sharpening. The chains are of same quality as those of our "Vulcan" Chain Pipe Tongs; all parts are fully guaranteed and replacements carried in stock.

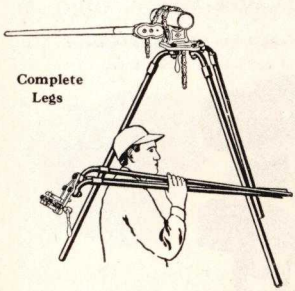
Nos. 1, 2 and 3 are packed in individual boxes for convenient shelving. Six of Nos. 1 and 2 boxes to a carton.

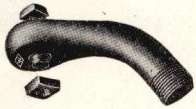
Orders for Chains take Screw also, unless otherwise specified.

No.	For Pipe, Sizes	Size, Folded for Packing	Wgt. Each, Lbs.	PRICES, VISES AND EXTRA PARTS						No.
				Jaws Pair	Chain with Screw	Screw	Handle with Nut	Nut	Vise Complete	
1	1/8 to 2	4 x 5 x 6	4	$ 3.00	$ 2.50	$ .80	$ 2.20	$ 1.40	$ 7.00	1
2	1/4 to 4	6 x 8 x 8	10	7.00	4.80	1.40	4.20	2.70	15.00	2
3	1/2 to 6	8 x 9 x 11	18	12.00	9.00	2.50	7.00	4.00	27.00	3
4	1/2 to 8	8 x 10 x 12	30	18.00	12.00	2.50	7.00	4.00	36.00	4

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
PIPE-VISE MOUNT



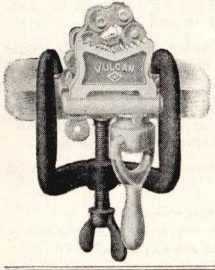


Drop-Forged Arm for
Base of Mount

This combination of drop-forged Arms (drilled and threaded) and standard pipe for legs provides a firm, portable Mount for Nos. 1 and 2 "Vulcan" Vises.

Furnished regularly with pipe legs. The Arms only, drilled and threaded, with bolts and nuts for attaching to Vise will be supplied, if specified.

Number	For "Vulcan" Vise Number	Weight Complete	PRICE		Number
			Arms, Bolts and Nuts, only	Complete Legs, but without Vise or Tongs	
1	1	11	$ 1.50	$ 3.00	1
2	2	15 1/2	2.00	4.00	2



"VULCAN"
PIPE-VISE CLAMP

This Clamp is designed for fastening No. 1 "Vulcan" Vise to table, bench or other support which it is desired to avoid marring by the use of screws or bolts. It is quickly and easily applied.

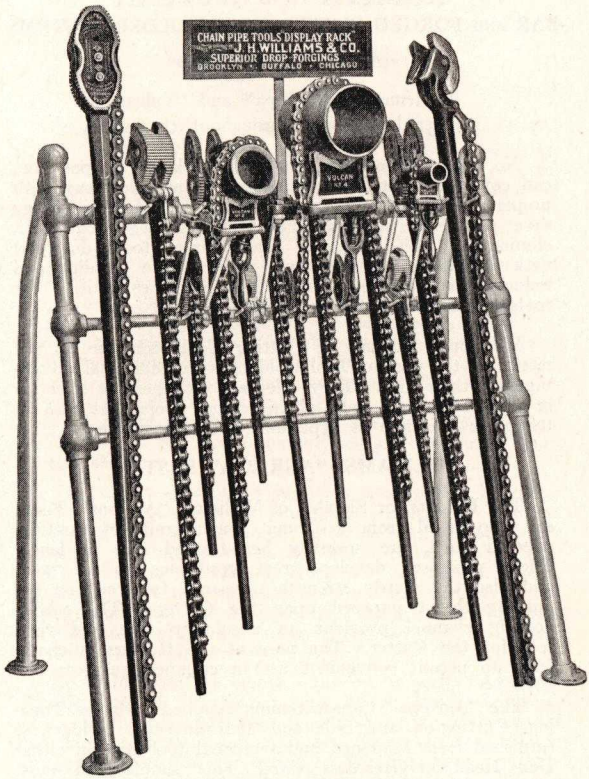
The Clamp is drop-forged from a strong, tough grade of special steel and is heat-treated to increase further its stiffness and strength. The Screws are also drop-forged; the Swivel is of wrought steel.

Weight each, 1 lb. 13 oz.

No.	For "Vulcan" Vise No.	Extreme Dimensions of Body		Screw		PRICE		No.
		Length	Width	Diameter	Length	Extra Screw and Swivel not Assembled	Complete Clamp	
1	1	5 1/8	4 3/4	1/2	3 5/8	$ .50	$ 1.75	1

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CHAIN PIPE TOOLS DISPLAY RACK



An attractive method of display and an efficient aid to salesmen in demonstrating Williams' Chain Pipe Tools. It makes the usual dark-corner storage space unnecessary and increases the interest of both buyer and seller in this stock.

The rack is made of wrought iron pipe aluminum painted, and occupies about 2 x 4 ft. It is loaned only to dealers in U. S. A. and Canada for use with Williams' Chain Pipe Tongs and Vises.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA" AND "VULCAN"
BAR AND FORGED-CUTTER TOOL-HOLDER SYSTEMS

"THE HOLDERS THAT HOLD"

Trademarks: "Agrippa" and "Vulcan"
registered generally throughout the world.

No solid, forged tool for lathe,—planer, shaper etc., can compare in convenience, efficiency and economy with properly designed and manufactured Tool Holders. They save practically all waste of costly High Speed Steel, eliminate all dead stock of heavy forged tools, do away with all blacksmith labor and most of the grinding and reduce loss in time of men and machines waiting for tools substantially to zero.

Williams' Systems of Cutting Tools combine all the merits of the various Tool Holders with additional advantages of their own. They offer a comprehensive selection in the choice not only of individual tools, but also of the basic principle of type unequalled elsewhere.

WILLIAMS' "AGRIPPA" SYSTEM

The Holders, or Shanks, of Williams' "Agrippa" Tools, all drop-forged from a strong, tough grade of carefully selected steel, are specially heat-treated and hardened. These processes develop great resistance to all wear and also the sturdy strength necessary to overcome the pushing thrust imposed upon the Cutters. The cutter-holding channel provides an absolutely true and rigid seat for the Cutter. The nose of the Holders is chamfered to permit convenient use in cramped quarters.

The "Agrippa" Cam-fastening, supplied with the Turning, Cutting-off and Side and Threading-tool Holders, is furnished from hardened and tempered tool steel in either Hex Head or Headless Cam. This simple and most efficient device is indestructible and provides the strongest and best cutter-fastening on the market. For those who, through long usage, prefer the set screw fastening, however, we offer our "Agrippa" Set Screw Pattern Turning-tools of the old Eberhardt type, thus providing abundant variety of selection.

(*Continued on next page*)

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA" AND "VULCAN"
BAR AND FORGED-CUTTER TOOL-HOLDER SYSTEMS

"THE HOLDERS THAT HOLD"

(Continued)

"Agrippa" Cutters are made from High Speed Bar Steel. Since those for Turning and Planing Tools are cut to the "diamond-point" form or bevel, they care for the most common requirements with a minimum of grinding.

WILLIAMS' "VULCAN" SYSTEM

Williams' "Vulcan" Forged-Cutter Tool Holders are offered to those who prefer the solid, forged-type of cutting tool. This construction eliminates the great cost of the old, solid tool and at the same time, retains its advantages; each Holder, by the mere insertion of small high speed Forged-Cutters, is adapted to the heaviest service in any regular machining operation on Lathe, Planer, Shaper, etc. Consequently, the economy and convenience of this line, when installed as standard shop equipment, is at once apparent, as all blacksmith work is eliminated.

The supply of Cutters for such a shop can be maintained in readiness for instant service by the man in charge of the tool room at practically no expense for grinding, so that the machine operator may have constantly available an ample stock for all regular needs. Duplicate lines of important shapes and sizes, with but slight additional investment, will insure the operator against interruption; he may thus devote his entire attention to *production* only.

The Holders, like those supplied in our "Agrippa" System, are all drop-forged from a fine grade of special steel, so heat-treated and hardened as to develop its maximum toughness and stiffness. They are very simple in construction, being composed of but three parts—Holder, proper, Square Head Cam and Locking Pin.

The Cutters, extra heavy in design are drop-forged from our "Agrippa" High Speed Steel and are hardened and ground ready for use. Any combination of Cutters will be furnished. All are guaranteed.

Williams' Tool Holders have saved for others—they will for you.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

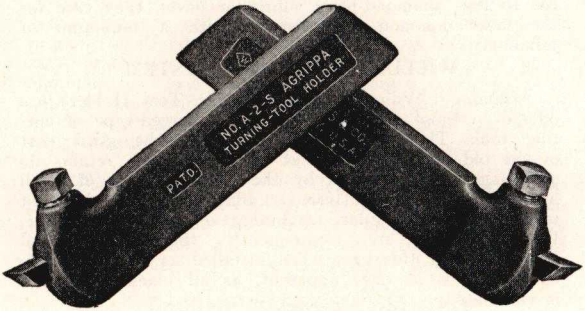
"AGRIPPA"
TURNING-TOOL HOLDERS

Set Screw Pattern

With Straight Shank

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished With Cutter and Finished Wrench

For general description, see page 116

The Set Screws, made of a fine grade of Alloy Steel, are accurately machined and carefully heat-treated and hardened. They are unusually tough and strong and give the maximum efficiency obtainable from this type of cutter-fastening.

The "Diamond-point" form in which Cutters are furnished requires the minimum of grinding.

Number	Holder, Size	Cutter Size, Square	PRICE		Number
			Cutters Only, High Speed Steel	Complete Tool, with High Speed Cutter	
A00-S	**5/16 x 3/4 x 4 1/2**	3/16	$ .15	$ 2.70	**A00-S**
A 0-S	**3/8 x 7/8 x 5**	1/4	.20	2.85	**A 0-S**
A 1-S	**1/2 x 1 1/8 x 6**	5/16	.35	3.25	**A 1-S**
A 2-S	**5/8 x 1 3/8 x 7**	3/8	.55	4.00	**A 2-S**
A 3-S	**3/4 x 1 5/8 x 8**	7/16	.90	5.40	**A 3-S**
A 4-S	**7/8 x 1 3/4 x 9**	1/2	1.30	6.90	**A 4-S**
A 5-S	**1 x 2 x 11**	5/8	2.35	9.75	**A 5-S**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"

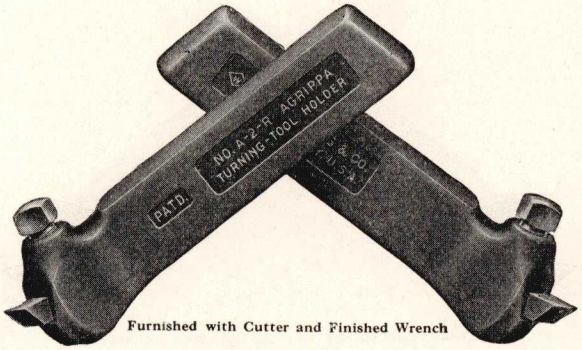
TURNING-TOOL HOLDERS

Set Screw Pattern

With Right and Left Hand Offset Shanks

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished with Cutter and Finished Wrench

For General Description see page 116.

The Set Screws, made of a fine grade of Alloy Steel, are accurately machined and carefully heat-treated and hardened. They are unusually tough and strong and give the maximum efficiency obtainable from this type of cutter fastening.

The "diamond-point" form in which Cutters are furnished requires the minimum of grinding.

Number		Holder, Size	Cutter Size	PRICE		Number	
Right Hand	Left Hand			Cutters Only, High Speed Steel	Complete Tool, High Speed Cutter	Right Hand	Left Hand
A00-R	A00-L	5/16 x 3/4 x 4 1/2	3/16	$ .15	$ 2.70	A00-R	A00-L
A 0-R	A 0-L	3/8 x 7/8 x 5	1/4	.20	2.85	A 0-R	A 0-L
A 1-R	A 1-L	1/2 x 1 1/8 x 6	5/16	.35	3.25	A 1-R	A 1-L
A 2-R	A 2-L	5/8 x 1 3/8 x 7	3/8	.55	4.00	A 2-R	A 2-L
A 3-R	A 3-L	3/4 x 1 5/8 x 8	7/16	.90	5.40	A 3-R	A 3-L
A 4-R	A 4-L	7/8 x 1 3/4 x 9	1/2	1.30	6.90	A 4-R	A 4-L
A 5-R	A 5-L	1 x 2 x 11	5/8	2.35	9.75	A 5-R	A 5-L

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

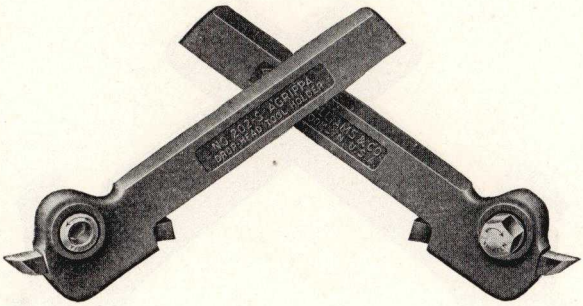
"AGRIPPA"

DROP-HEAD TURNING-TOOL HOLDERS

With Straight Shank

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished with either type of Cam, Finished Wrench and Cutter

For General Description, see page 116.

Designed for use on Lathes with Clamp-tool Rests and low centers, and excellently adapted for Shaper and Planer work.

The Cam-fastening is always rapid and positive—the greater the pressure the tighter

Unless otherwise specified Hex Head Cam will be furnished.

No.	Holder, Size	Cutter Size, Square	Height from Bottom of Shank to Cutter Point	PRICE			No.
				Extra Interchangeable Cams, Each	Cutters Only, High Speed Steel	Complete Tool, with High Speed Cutters	
0200-S	**7/16 x 9/16 x 6**	3/16	9/16	$ .90	$ .15	$ 2.70	**0200-S**
200-S	**9/16 x 11/16 x 6 7/8**	1/4	11/16	.99	.20	2.85	**200-S**
201-S	**3/4 x 7/8 x 7 7/8**	5/16	13/16	1.10	.35	3.25	**201-S**
202-S	**7/8 x 1 x 8 7/8**	3/8	15/16	1.22	.55	4.00	**202-S**
204-S	**1 1/8 x 1 1/4 x 11**	1/2	1 3/16	1.50	1.30	6.90	**204-S**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

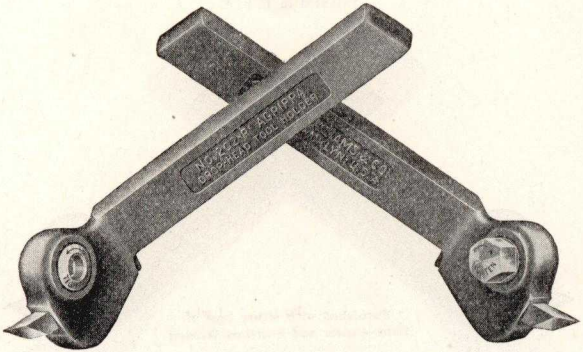
"AGRIPPA"

DROP-HEAD TURNING-TOOL HOLDERS

With Right and Left Hand Offset Shanks

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished with either type of Cam, Finished Wrench and Cutter

(Continued from previous page)

the lock. It offers full freedom for operation without removal of Holder from tool post, and imposes no obstruction to cutting facilities. Both types of Cam are interchangeable, and extra Cams can be furnished at a slight charge.

The "diamond-point" form in which Cutters are furnished requires the minimum of grinding.

Unless otherwise specified, Hex Head Cam will be furnished.

Number		Holder, Size	Cutter Size, Square	Height from Bottom of Shank to Cutter Point	PRICE		
Right Hand	Left Hand				Extra Interchangeable Cams, Each	Cutters Only, High Speed Steel	Complete Tool, with High Speed Cutter
0200-R	0200-L	7/16 x 9/16 x 5 3/4	3/16	9/16	$ .90	$ .15	$ 2.70
200-R	200-L	9/16 x 11/16 x 6 5/8	1/4	11/16	.99	.20	2.85
201-R	201-L	3/4 x 7/8 x 7 5/8	5/16	13/16	1.10	.35	3.25
202-R	202-L	7/8 x 1 x 8 1/2	3/8	15/16	1.22	.55	4.00
204-R	204-L	1 1/8 x 1 1/4 x 10 1/2	1/2	1 3/16	1.50	1.30	6.90

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
TURNING-TOOL HOLDERS
CAM PATTERN
With Straight Shank

"THE HOLDERS THAT HOLD"

Patented in U. S. A.

Furnished with either type of Cam, Cutter and Finished Wrench

For General Description, see page 116.

For those who purchase Cutters made of steel rolled to the variation in size common to usual mill practice, this Cam Pattern Holder provides greatest economy, strength and efficiency.

The Cam-fastening is always rapid and positive—the greater the pressure the tighter the lock. The gradual "rise" of the Cam while providing great power, obviously limits its range of contact; consequently where the size of steel used in cutters

Unless otherwise specified Hex Head Cam will be furnished.

Number	Holder, Size	Cutter Size, Square	PRICE			Number
			Extra Interchangeable Cams, Each	Cutters Only, High Speed Steel	Complete Tool, with High Speed Cutter	
00-S	**5/16 x 3/4 x 4 1/2**	3/16	$ .90	$ .15	$ 2.70	**00-S**
0-S	**3/8 x 7/8 x 5**	1/4	.99	.20	2.85	**0-S**
1-S	**1/2 x 1 1/8 x 6**	5/16	1.10	.35	3.25	**1-S**
2-S	**5/8 x 1 3/8 x 7**	3/8	1.22	.55	4.00	**2-S**
3-S	**3/4 x 1 5/8 x 8**	7/16	1.35	.90	5.40	**3-S**
4-S	**7/8 x 1 3/4 x 9**	1/2	1.50	1.30	6.90	**4-S**
5-S	**1 x 2 x 11**	5/8	1.65	2.35	9.75	**5-S**
6-S	**1 1/4 x 2 1/4 x 14 1/4**	3/4	1.80	3.85	13.50	**6-S**

Weights given page 184.

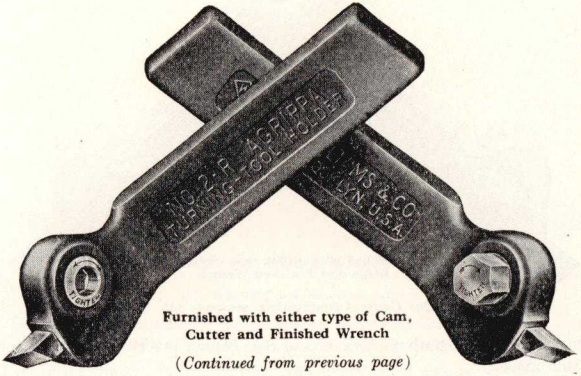
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
TURNING-TOOL HOLDERS
CAM PATTERN

With Right and Left Hand Offset Shanks

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished with either type of Cam, Cutter and Finished Wrench

(Continued from previous page)

varies beyond established limits, we recommend the Set Screw Pattern shown on pages 118 and 119.

Both types of Cam are interchangeable and extra Cams can be furnished at a slight charge.

The "diamond-point" form in which Cutters are furnished requires the minimum of grinding.

Unless otherwise specified Hex Head Cam will be furnished.

Number				PRICE			Number	
Right Hand	Left Hand	Holder, Size	Cutter Size, Square	Extra Interchangeable Cams, Each	Cutters Only, High Speed Steel	Complete Tool, with High Speed Cutter	Right Hand	Left Hand
00-R	00-L	5/16 x 3/4 x 4 1/2	3/16	$ .90	$ .15	$ 2.70	00-R	00-L
0-R	0-L	3/8 x 7/8 x 5 1/4	1/4	.99	.20	2.85	0-R	0-L
1-R	1-L	1/2 x 1 1/8 x 6 1/2	5/16	1.10	.35	3.25	1-R	1-L
2-R	2-L	5/8 x 1 3/8 x 7 5/8	3/8	1.22	.55	4.00	2-R	2-L
3-R	3-L	3/4 x 1 5/8 x 8 3/4	7/16	1.35	.90	5.40	3-R	3-L
4-R	4-L	7/8 x 1 3/4 x 9 7/8	1/2	1.50	1.30	6.90	4-R	4-L
5-R	5-L	1 x 2 x 12 1/4	5/8	1.65	2.35	9.75	5-R	5-L
6-R	6-L	1 1/4 x 2 1/4 x 13 7/8	3/4	1.80	3.85	13.50	6-R	6-L

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"

CUTTING-OFF AND SIDE-TOOL HOLDERS

For Interchangeable Blades. Right Hand, Straight Shank

"THE HOLDERS THAT HOLD"

Patented in U. S. A.

Furnished with either type of Cam, Blade and Finished Wrench

For General Description, see page 116.

One Holder takes **both** Cutting-off and Side Blades, providing unequaled convenience and economy.

The Cam-fastening is always rapid and positive—the greater the pressure the tighter the lock. It offers full freedom for operation without removal of Holder

Unless otherwise specified, Cutting-off Blade and Hex Head Cam will be furnished.

No.	Holder, Size	Cutter Blade, Finished Size		PRICE			
				Extra Cutting-off Tool Blade, Finished High Speed Steel	Extra Side Tool Blade, Finished High Speed Steel	Complete Holder	
		Cutting-off Tool	Side Tool			With Cutting-off Tool Blade, High Speed Steel	With Side-Tool Blade, High Speed Steel
020-R	5/16 x 25/32 x 4 5/8	5/64 x 1/2	1/8 x 1/2	$ .60	$ .60	$ 2.85	$ 2.85
20-R	3/8 x 15/16 x 5 1/4	3/32 x 5/8	5/32 x 5/8	.65	.90	3.00	3.40
21-R	1/2 x 1 3/16 x 6 1/4	1/8 x 3/4	3/16 x 3/4	.90	1.40	3.60	4.35
22-R	5/8 x 1 3/8 x 7 1/8	1/8 x 7/8	1/4 x 7/8	1.30	2.30	4.50	6.00
23-R	3/4 x 1 5/8 x 8 3/8	3/16 x 1	5/16 x 1	2.15	3.40	6.00	7.85
24-R	7/8 x 1 3/4 x 9 3/8	3/16 x 1 1/8	3/8 x 1 1/8	2.90	5.00	7.50	10.65
***25-R**	7/8 x 1 3/4 x 9 3/8	1/4 x 1 1/8		4.00		8.60	

*This is 24-R Holder fitted with No. 25 Blade, making it equivalent to No. 25 Cutting-off Tool.

Weights given page 184.

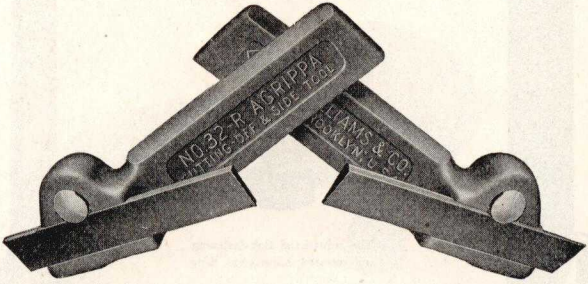
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
CUTTING-OFF AND SIDE-TOOL HOLDERS

For Interchangeable Blades. Right and Left Hand Offset Shanks

"THE HOLDERS THAT HOLD"

Patented in U. S. A.



Furnished with either type of Cam, Blade and Finished Wrench

(*Continued from previous page*)

from tool post, and imposes no obstruction to cutting facilities. Both types of Cam are interchangeable and extra Cams can be furnished at a slight charge.

The Cutter Blades, furnished from High Speed Steel and ground ready for use assure an extended service of high class cutting qualities and great wear.

Unless otherwise specified Cutting-off Blade and Hex Head Cam will be furnished.

Number		Holder, Size	Cutter Blade, Finished Size		PRICE			
					Extra Cutting-off Tool Blade, Finished High Speed Steel	Extra Side-Tool Blade, Finished High Speed Steel	Complete Holder	
Right Hand	Left Hand		Cutting-off Tool	Side Tool			With Cutting-off Tool Blade, High Speed Steel	With Side-Tool Blade, High Speed Steel
030-R	**030-L**	5/16 x 25/32	5/64 x 1/2	1/8 · x 1/2	$ .60	$ .60	$ 2.85	$ 2.85
30-R	**30-L**	3/8 x 15/16	3/32 x 5/8	5/32 x 5/8	.65	.90	3.00	3.40
31-R	**31-L**	1/2 x 1 3/16	1/8 x 3/4	3/16 x 3/4	.90	1.40	3.60	4.35
32-R	**32-L**	5/8 x 1 3/8	1/8 x 7/8	1/4 x 7/8	1.30	2.30	4.50	6.00
33-R	**33-L**	3/4 x 1 5/8	3/16 x 1	5/16 x 1	2.15	3.40	6.00	7.85
34-R	**34-L**	7/8 x 1 3/4	3/16 x 1 1/8	3/8 x 1 1/8	2.90	5.00	7.50	10.65
***35-R**	***35-L**	7/8 x 1 3/4	1/4 x 1 1/8		4.00		8.60	

*These are 34-R and 34-L Holders fitted with No. 35 Blade, making them equivalent to No. 35 Cutting-off tool.

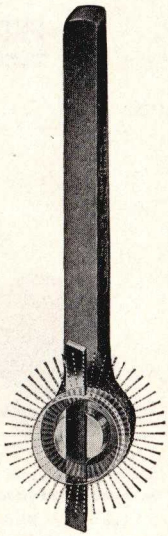
Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
PLANING-TOOL HOLDERS
"THE HOLDERS THAT HOLD"

Patented in U. S. A.

The substantial Bolt-fastening and serrated Adjustment Ring



The construction affords most ready release of Cutter for adjustment

The serrations in Holder provide maximum of cutter adjustment

Furnished with Cutter and Finished Wrench

For General Description, see page 116.

A rugged, substantial and efficient tool on either Lathe or Planer. Because of its numerous angles of adjustment it also makes an excellent Offset Turning Tool.

The construction assures perfect seat and holding qualities for the Cutters; the convex face of Clamp Nut provides uniform locking pressure for Cutters of either square or rectangular form; the numerous serrations in Holder provide for quick, fine and maximum number of Cutter adjustments unequaled in other designs.

The serrated washer, or Adjustment Ring, which sustains the fastening and working strains, is hardened and tempered. Should it wear in prolonged service, a new Ring *only* is required—not a complete Holder.

No.	Holder, Size	Cutter Size	PRICE			No.
			Extra Adjustment Ring	Cutter Only, High Speed Steel	Complete Holder, High Speed Cutter	
91	**1/2 x 1 x 7**	1/4 x 3/8	$ .60	$ .35	$ 4.65	**91**
92	**5/8 x 1 1/4 x 8 1/2**	5/16 x 7/16	.68	.55	6.00	**92**
93	**3/4 x 1 1/2 x 10 1/4**	3/8 x 1/2	.83	.80	7.85	**93**
94	**1 x 1 3/4 x 13 1/4**	1/2 x 3/4	1.05	1.95	12.40	**94**
95	**1 3/8 x 2 x 16 1/2**	5/8 x 7/8	1.50	3.35	21.75	**95**
96	**1 3/4 x 2 3/8 x 19**	3/4 x 1	2.25	5.00	39.00	**96**
97	**2 1/8 x 2 3/4 x 22**	7/8 x 1 1/8	3.38	8.20	57.00	**97**

Weights given page 184.

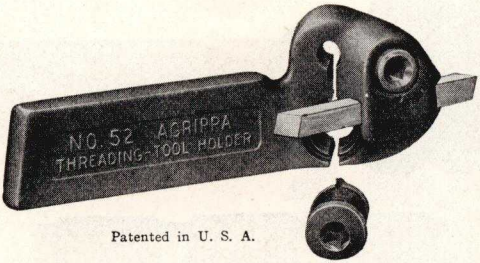
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"

THREADING TOOL HOLDERS

With Lockable-Spring Head

"THE HOLDERS THAT HOLD"



Patented in U. S. A.

Furnished with Alloy Steel Cutter and Hardened Wrench

For General Description, see page 116.

A highly perfected tool for fine or coarse threading, or other Lathe work. The Nut for the Lockable-Spring Head provides for the rigid backing required for coarse threading and heavy cuts; when it is loosened, the Holder becomes a spring-tool for finishing work It is equally efficient as a Turning-tool Holder, for which purpose the High Speed Cutters furnished with the Turning-tool Holders can be supplied; see page 130.

The Cam-fastening is always rapid and positive—the greater the pressure the tighter the lock. It offers full freedom for operation without removal from tool post and imposes no obstruction to cutting facilities.

The Cutter is made from the highest grade of Alloy Steel. Each end is ground, the point forming an angle of 60° for U. S. and 55° for Whitworth Standard threads.

Number	Holder, Size	Cutter, Size Square	PRICE		Number
			Extra Finished Cutter, Alloy Steel	Complete Tool	
50	**3/8 x 7/8**	1/4	$ .45	$ 4.15	**50**
51	**1/2 x 1 1/8**	5/16	.55	5.00	**51**
52	**5/8 x 1 3/8**	3/8	.70	6.40	**52**

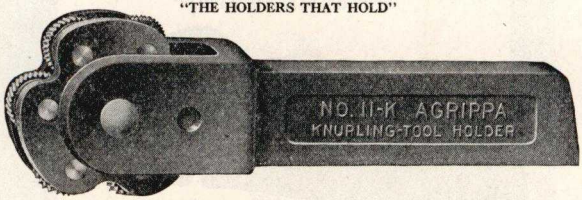
Weights given page 184.

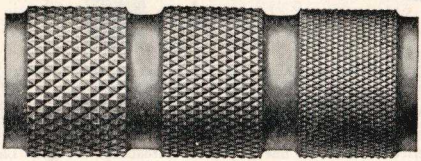
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
KNURLING-TOOL HOLDER

With Universal Revolving Head

"THE HOLDERS THAT HOLD"





Coarse 14 Pitch | Medium 21 Pitch | Fine 33 Pitch

Illustration shows actual size of knurling

For General Description, see page 116.

The three pairs of Knurls, fitted in a revolving head, provide for coarse, medium and fine work, and the minimum of time losses in changing from one grade of knurling to another. Like the pins or axles, they are made from hardened and tempered Crucible Tool Steel.

Furnished with three pairs of Knurls, as illustrated.

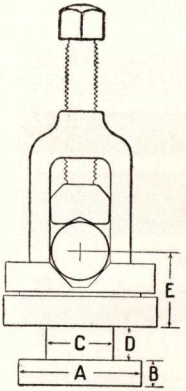
Number	Holder, Size	Standard Knurls, Size	PRICE		Number
			Extra Knurls, Pair	Complete Holder	
11-K	**1/2 x 1 1/8 x 6 5/8**	3/16 x 3/4	$ 1.15	$ 9.00	**11-K**

Weights given page 184.

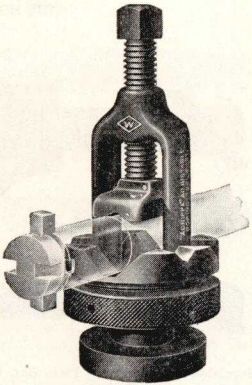
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
ADJUSTABLE BORING-TOOL POSTS

For Multiple Bars



Patented in
U. S. A.



Furnished with either Sleeve or Plain Bar, 1 each 45° and 90° Cutter and Finished Wrenches

Each Post accommodates a wide range of Bars; commercial sizes of bar steel are adaptable for either Bars or Cutters without machining.

The height of the Bar is easily and quickly adjusted—a turn of the Knurled Ring will raise or lower the base on which the Bar rests; tightening the Set Screw in the head of the Post then locks the whole device instantly, giving an extremely rigid tool. If Post is desired *without* the Bar, deduct price shown on page 131.

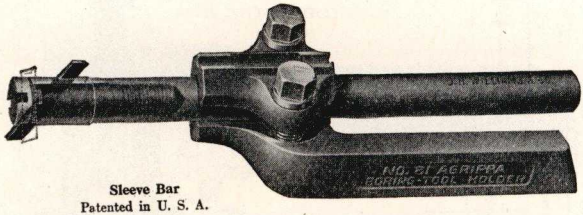
Unless otherwise specified Standard size Sleeve Bar will be furnished.

Number	2	3	4	5
Post—Length over all, without Screw	6 5/8	7 5/8	9 1/8	11 1/8
*"T" Slot Flange:				
Diameter, A	3	3 1/2	4 1/4	5
Thickness, B	5/8	3/4	7/8	1 1/16
*"T" Slot Neck:				
Diameter, C	1 5/8	1 3/4	2	2 1/4
Length, D	3/4	13/16	1	1 1/4
Center Height, E	1 13/16	1 7/8	2 3/8	2 3/4
Post Capacity for Bars—Size	1/2 to 1 5/16	1/2 to 1 1/2	5/8 to 1 13/16	3/4 to 2 1/4
Standard Bar—Size	1 5/16	1 1/2	1 13/16	2 1/4
PRICE—Complete Post:				
With Sleeve Bar, High Speed Cutters	$ 27.00	$ 37.50	$ 60.00	$ 90.00
With Plain Bar, High Speed Cutters	$ 25.50	$ 35.75	$ 58.00	$ 86.50

*The "T" Slot Flange and Neck are furnished large to allow for fitting to individual machines. For special finishing to specified dimensions, an extra charge of $1.00 net, each, will be made. Weights given page 184. Bar and Cutter details on page 131.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
BORING-TOOL HOLDERS
For Multiple Bars
"THE HOLDERS THAT HOLD"



Sleeve Bar
Patented in U. S. A.

Plain Bar

Furnished with Sleeve or Plain Bar, 1 each 45° and 90° Cutter and Finished Wrenches

For General Description, see page 116.

With this Holder, encumbering sleeves or bushings are unnecessary for Bars of various sizes; *One* Holder takes *many* Bars. Commercial forms of bar steel are adaptable for either Bars or Cutters without machining.

The Sleeve-bar fastening provides for the rapid adjustment of either straight or angular Cutters without the use of extra parts; it has greater strength than others of the same general design. The Plain Bar provides for use with either Straight or Angular Cutters in the simplest manner possible and is furnished with Headless Set Screws.

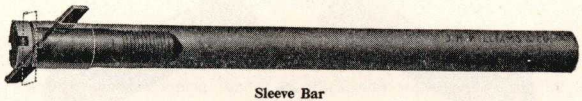
Unless otherwise specified, Standard size Sleeve Bar will be furnished

No.	Holder, Size	Holder Capacity for Bars, Size	Standard Bar, Size	PRICE Complete Holder		No.
				With Plain Bar, High Speed Cutters	With Sleeve Bar, High Speed Cutters	
080	5/16 x 3/4	3/16 to 1/2	1/2	$ 4.30	$ 4.90	080
80	3/8 x 7/8	1/4 to 5/8	5/8	4.30	4.90	80
81	1/2 x 1 1/8	1/4 to 3/4	3/4	5.00	5.80	81
82	5/8 x 1 3/8	3/8 to 15/16	15/16	6.50	7.65	82
83	3/4 x 1 5/8	1/2 to 1 1/8	1 1/8	9.60	10.85	83

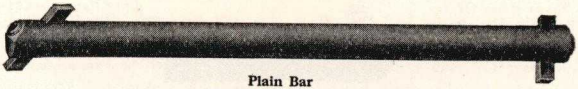
Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
BORING-BARS AND CUTTERS
FOR
BORING-TOOL HOLDERS AND ADJUSTABLE BORING-TOOL POSTS



Sleeve Bar
Patented in U. S. A.



Plain Bar

The Sleeve-bar fastening provides for the rapid adjustment of either straight or angular Cutters without the use of extra parts; it has greater strength than others of the same general design. The Plain Bar provides for use with either straight or angular Cutters in the simplest manner possible, and is furnished with Headless Set Screws.

Furnished with two Cutters and Finished Wrench

"Agrippa" Boring-Bars Approximate Size		For Use With		Cutters		PRICE		
							Complete Bar	
Plain	Sleeve	Holders No.	Posts No.	Size	For Use at Angles of	Cutters Only, High Speed	Plain, with High Speed Cut'rs	Sleeve, with High Speed Cut'rs
1/2 x 8 1/8	1/2 x 7 5/8	080–83	2–3	3/16 x 1 3/16 x 1 1/2	90° 45°	$ .10 .12	$ 2.40	$ 3.00
5/8 x 10 1/8	5/8 x 9 1/8	80–83	2–4	3/16 x 1 3/16 x 1 1/2	90° 45°	.10 .12	2.40	3.00
3/4 x 12 1/8	3/4 x 11	81–83	2–5	1/4 x 1 1/4 1/4 x 2	90° 45°	.15 .19	2.95	3.75
15/16 x 14 1/8	15/16 x 13 1/4	82–83	2–5	5/16 x 1 1/2 5/16 x 2 1/2	90° 45°	.24 .32	4.25	5.40
1 1/8 x 16 3/4	1 1/8 x 16	83	2–5	3/8 x 1 7/8 3/8 x 3	90° 45°	.35 .50	6.25	7.50
1 5/16 x 20	1 5/16 x 19		2–5	3/8 x 2 1/8 3/8 x 3 1/4	90° 45°	.40 .55	9.00	10.50
1 1/2 x 23 1/2	1 1/2 x 23 1/4		3–5	7/16 x 2 1/4 7/16 x 3 3/8	90° 45°	.60 .85	11.75	13.50
1 13/16 x 28	1 13/16 x 27 1/4		4–5	1/2 x 2 5/8 1/2 x 4	90° 45°	.90 1.30	17.50	19.50
2 1/4 x 34	2 1/4 x 33		5	5/8 x 3 1/8 5/8 x 4 3/4	90° 45°	1.70 2.35	31.00	34.50

Holders, see previous page ; Posts, see page 129.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
LATHE TOOL SETS

"THE HOLDERS THAT HOLD"

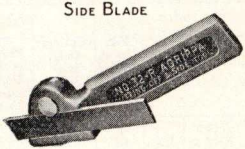
RIGHT HAND OFFSET TURNING-TOOL HOLDER WITH ONE CUTTER

LEFT HAND OFFSET TURNING-TOOL HOLDER WITH ONE CUTTER

STRAIGHT TURNING-TOOL HOLDER WITH ONE CUTTER

RIGHT HAND STRAIGHT CUTTING-OFF & SIDE TOOL HOLDER WITH ONE EACH CUTTING-OFF AND SIDE BLADE

THREADING-TOOL HOLDER WITH ONE CUTTER



RIGHT HAND OFFSET CUTTING-OFF & SIDE TOOL HOLDER WITH ONE EACH CUTTING-OFF AND SIDE BLADE

LEFT HAND OFFSET CUTTING-OFF & SIDE TOOL HOLDER WITH ONE EACH CUTTING-OFF AND SIDE BLADE

BORING-TOOL HOLDER WITH SLEEVE BAR AND TWO CUTTERS

Always ready Sets of "Agrippa" Tool Holders provide in a minimum number of tools, for greatest economy and service in lathe work. For description see following page.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
LATHE TOOL SETS

"THE HOLDERS THAT HOLD"

High Speed Steel Cutters

Convenient—Efficient—Economical—Superior

Williams' "Agrippa" Holders save all lost time of men and machines waiting for tools. Nearly all tool-grinding time. All blacksmith work. Practically all loss of costly high speed steel.

In order to provide for all regular Lathe operations—Turning, Boring, Threading, Cutting-off and Side Work—in the most economical and efficient manner, six "always ready" Sets of Tool Holders, illustrated on opposite page, have been developed. These combinations of Williams' "Agrippa" Tool Holders offer comprehensive and complete Lathe Service *in a minimum number of tools*, unequalled elsewhere. Cutters and finished Wrenches are provided throughout.

Threading-tool Cutters are made from the highest grade of Alloy Steel; all others from our "Agrippa" High Speed Steel. All Cutters are carefully hardened.

The Boring-tool Holder will be furnished regularly with Sleeve Bar, as illustrated or, should Plain Bar be specified, at a lower price; see table, page 130.

Lathe Sets with Turning-tools of Set Screw Pattern, as illustrated, are numbered with the prefix "A" to distinguish them from Sets with Cam Pattern Turning-tools, which carry the same Set number *without* the letter.

Unless otherwise specified, Set Screw Turning-Tool Holders will be furnished in Lathe Sets.

Set No.	For Lathes of Approx. *Swing, Inches	"Agrippa" Tool Holders in Sets					PRICE
		Size of Holder Shank	Turning Tools; Straight and R and L Hand Offset Shanks, 1 Each, Nos.	Cutting-off and Side Tools; Straight and R and L Hand Offset Shanks, 1 Each, Nos.	Threading Tool, 1 Each No.	Boring Tool, 1 Each No.	Complete Set with High Speed Steel Cutters
A00	7 to 10	5/16 x 3/4	A00-S, R, L	020-R, 030-R, L	.....	080	**$ 23.35**
A0	10 to 12	3/8 x 7/8	A 0-S, R, L	20-R, 30-R, L	50	80	**29.30**
A1	14 to 16	1/2 x 1 1/8	A 1-S, R, L	21-R, 31-R, L	51	81	**35.55**
A2	16 to 18	5/8 x 1 3/8	A 2-S, R, L	22-R, 32-R, L	52	82	**46.45**
A3	18 to 20	3/4 x 1 5/8	A 3-S, R, L	23-R, 33-R, L	.....	83	**55.25**
A4	24 to 36	7/8 x 1 3/4	A 4-S, R, L	24-R, 34-R, L	.....	.....	**58.20**

*Be careful to measure the opening in tool-post before ordering Sets. Due to a considerable variation in the proportions of lathes as furnished by different manufacturers, it is impossible to state definitely the "swing" of lathe best adapted to a given size Tool Holder.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"
HIGH SPEED STEEL CUTTERS
FOR "AGRIPPA" TOOL HOLDERS

Require minimum of grinding only for use in Holders. All Cutters are hardened.

For Turning-Tool Holders

No.	CUTTER, SIZE		PRICE Each, High Speed
	Square	Length	
00 & 0200	3/16	1 7/8	$ .15
0 & 200	*1/4	2 3/8	.20
1 & 201	*5/16	2 7/8	.35
2 & 202	*3/8	3 3/8	.55
3	7/16	3 3/4	.90
4 & 204	1/2	4 1/8	1 30
5	5/8	4 3/4	2 35
6	3/4	5 1/2	3.85

*Cutters of these sizes are also suitable for turning when used in Threading-Tool Holder.

For Threading-Tool Holders

No.	CUTTER, SIZE		PRICE Each, Alloy Steel Finished Cutter
	Square	Length	
50	1/4	2 3/8	$ .45
51	5/16	2 7/8	.55
52	3/8	3 3/8	.70

Turning-Tool Cutters marked * are suitable for turning work in Threading-Tool Holders. See table above.

Bevel For Cutting-Off Tool Holder

No.	Finished Cutter Blade, Ground to Size	PRICE Each, High Speed
020 & 030	5/64 x 1/2 x 4 1/2	$ .60
20 & 30	3/32 x 5/8 x 5	.65
21 & 31	1/8 x 3/4 x 6	.90
22 & 32	1/8 x 7/8 x 7	1.30
23 & 33	3/16 x 1 x 8	2.15
24 & 34	3/16 x 1 1/8 x 9	2.90
25 & 35	1/4 x 1 1/8 x 10	4.00

For "Agrippa" Boring Bars

Bar Diam.	For Use at Angle of	CUTTER, SIZE		PRICE Each, High Speed
		Square	Length	
1/2	90°	3/16	1	$ .10
	45°	3/16	1 1/2	.12
5/8	90°	3/16	1	.10
	45°	3/16	1 1/2	.12
3/4	90°	1/4	1 1/4	.15
	45°	1/4	2	.19
15/16	90°	5/16	1 1/2	.24
	45°	5/16	2 1/2	.32
1 1/8	90°	3/8	1 7/8	.35
	45°	3/8	3	.50
1 5/16	90°	3/8	2 1/8	.40
	45°	3/8	3 1/4	.55
1 1/2	90°	7/16	2 1/4	.60
	45°	7/16	3 3/8	.85
1 13/16	90°	1/2	2 5/8	.90
	45°	1/2	4	1.30
2 1/4	90°	5/8	3 1/8	1.70
	45°	5/8	4 3/4	2.35

For Planing-Tool Holders

No.	CUTTER, SIZE		PRICE Each, High Speed
	Flat	Length	
91	1/4 x 3/8	2 1/2	$ .35
92	5/16 x 7/16	3	.55
93	3/8 x 1/2	3 1/2	.80
94	1/2 x 3/4	4 1/4	1.95
95	5/8 x 7/8	5	3.35
96	3/4 x 1	6	5.00
97	7/8 x 1 1/8	7	8.20

Heavy Bevel For Side-Tool Holder

No.	Finished Cutter Blade, Ground to Size	PRICE Each, High Speed
020 & 030	1/8 x 1/2 x 4 1/2	$ 60
20 & 30	5/32 x 5/8 x 5	90
21 & 31	3/16 x 3/4 x 6	1.40
22 & 32	1/4 x 7/8 x 7	2.30
23 & 33	5/16 x 1 x 8	3.40
24 & 34	3/8 x 1 1/8 x 9	5.00

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"

HIGH SPEED STEEL

IN 3 FEET LENGTHS

Treatment for "Agrippa" High Speed Tool Holder Steel:—Preheat slowly and thoroughly to 1700°F., then bring up the heat rapidly to 2250° to 2300° and cool in oil; as soon as possible after hardening draw cutters to 1100° to remove strains and to toughen.

Squares, for Use with	Size, Square	PRICE 3 Feet Lengths Annealed High Speed	PRICE 3 Feet Lengths Special Alloy Steel (Not Ground)
"Agrippa" Turning and Boring-Tool Holders	3/16	$ 1.40	...
	1/4	2.25	$ 1.00
	5/16	3.40	1.50
	3/8	4.80	2.15
"Agrippa" Threading Tool Holders (Special Alloy Steel Cutters are furnished)	7/16	6.30	For Threading Work Only.
	1/2	8.00	
	5/8	12.50	
	3/4	17.80	

Flats, for Use with	Size, Flat Section	PRICE 3 Feet Lengths Annealed High Speed
"Agrippa" Planing-Tool Holders	1/4 x 3/8	$ 3.50
	5/16 x 7/16	4.80
	3/8 x 1/2	6.60
	1/2 x 3/4	12.50
	5/8 x 7/8	17.50
	3/4 x 1	23.25
	7/8 x 1 1/8	30.70

Heavy Bevels, for Use with	*Size Section for Side Blade	PRICE 3 Feet Lengths Annealed High Speed
"Agrippa" Cutting-off and Side-Tool Holders	1/8 x 1/2	$ 2.80
	5/32 x 5/8	3.70
	3/16 x 3/4	4.70
	1/4 x 7/8	7.00
	5/16 x 1	9.10
	3/8 x 1 1/8	12.45

Bevels, for Use with	*Size Section for Cutting-off Blade	PRICE 3 Feet Lengths Annealed High Speed
"Agrippa" Cutting-off and Side-Tool Holders	5/64 x 1/2	$ 2.60
	3/32 x 5/8	2.70
	1/8 x 3/4	4.00
	1/8 x 7/8	4.35
	3/16 x 1	6.75
	3/16 x 1 1/8	7.50
	1/4 x 1 1/8	10.40

*Bevel Steel for Cutting-off and Side Blades requires grinding on edges to fit "Agrippa" Holders exactly Finished sizes are given.

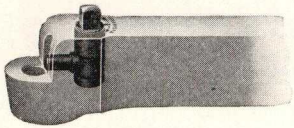
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
FORGED-CUTTER TOOL HOLDERS

FOR LATHE, PLANER, SHAPER, ETC.

"THE HOLDERS THAT HOLD"

Patented in U. S. A.,
Great Britain and France.



Furnished with Square Head Cam and Finished Wrench

This is an unusually efficient tool for heavy service on Lathe, Planer, Shaper, etc. It is practically the equal of hand-forged, solid tools and is much more economical.

The drop-forged Holder is composed of but three parts, all of which are so heat-treated and hardened as to develop the greatest stiffness and strength, together with the ability to resist hard wear.

The Cutters are furnished separately and are described in detail on following page.

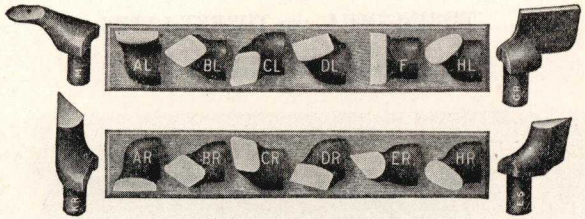
No.	Holder, Size	Height from Point of Cutter to Bottom of Shank	Cutter Shank, Diameter	PRICE		No.
				Extra Cams, Each	Holder *Without* Cutter	
101	**1/2 x 1 1/8 x 7 1/2**	1 3/16	3/8	$ .58	$ 2.75	**101**
102	**5/8 x 1 3/8 x 9**	1 7/16	7/16	.63	3.50	**102**
103	**3/4 x 1 5/8 x 10 1/2**	1 11/16	1/2	.68	4.50	**103**
105	**1 x 2 x 14**	2	11/16	.84	6.75	**105**
106	**1 1/4 x 2 1/4 x 16**	2 1/4	25/32	.95	9.00	**106**
108	**1 5/8 x 2 3/4 x 20**	3	1	2.50	15.00	**108**

Weights given page 184.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"

FORGED-CUTTERS FOR "VULCAN" TOOL HOLDERS



These Cutters, with extra heavy shanks to minimize breakage, are drop-forged from our "Agrippa" High Speed Steel and are finished and hardened ready for use.

The angular seat on the rear of the shoulder permits the Locking-pin to force the heel, or step, of the shoulder directly against the Holder proper. This method of locking provides the necessary bearing to support the cutting-pressure and prevents all rocking movement of the Cutter itself.

When ordered in assorted lots of 12 of one size shank, they will be supplied mounted on a carrier.

*Cutter Marks	Style of Cutter	PRICE For Holder Number					
		101	102	103	105	106	108
	Diameter of Cutter Shank	3/8	7/16	1/2	11/16	25/32	1
A L	Side, Left Hand	$ 1.15	$ 2.10	$ 2.55	$ 3.55	$ 5.00	.....
A R	Side, Right Hand	1.15	2.10	2.55	3.55	5.00	.....
B L	Diamond Point, Left Hand	1.15	2.10	2.55	3.55	5.00	$10.90
B R	Diamond Point, Right Hand	1.15	2.10	2.55	3.55	5.00	10.90
C L	Offset Diamond Point, L.H.	1.15	2.10	2.55	3.55	5.00	12.35
C R	Offset Diamond Point, R.H.	1.15	2.10	2.55	3.55	5.00	12.35
D L	Roughing, Left Hand	1.15	2.10	2.55	3.55	5.00	10.90
D R	Roughing, Right Hand	1.15	2.10	2.55	3.55	5.00	10.90
E R	Threading, Right Hand	1.45	2.40	.....	.....	.....	.....
E S	Threading, Straight	1.45	2.40	.....	.....	.....	.....
F	Flat Nose	1.65	2.85	3.55	4.25	5.75	13.50
F L	Offset Flat Nose, Left Hand	.....	.....	.....	3.55	5.00	.....
F R	Offset Flat Nose, Right Hand	.....	.....	.....	3.55	5.00	.....
G R	Cutting-off, Right Hand	1.25	2.55	.....	.....	.....	.....
H L	Hog Nose, Left Hand	1.15	2.10	2.55	3.55	5.00	10.90
H R	Hog Nose, Right Hand	1.15	2.10	2.55	3.55	5.00	10.90
K L	Dovetail, Left Hand	1.45	.....	3.55	.....	.....	.....
K R	Dovetail, Right Hand	1.45	.....	3.55	.....	.....	.....
M	Spotting	1.15	.....	.....	.....	.....	.....
N L	Facing, Left Hand	.....	.....	.....	3.55	5.00	.....
N R	Facing, Right Hand	.....	.....	.....	3.55	5.00	.....

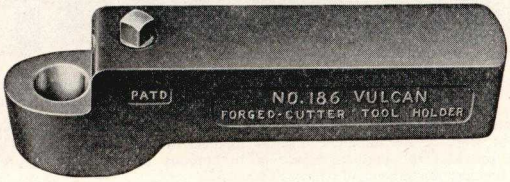
No. 108 Cutters are used also for Planer-Tool Holders Nos. 128, 148, 168, described on page 140.

*When Cutters are ordered ground for use on Planer or Shaper, the letter "O" will be added to the Cutter mark for identification. *Unless otherwise specified, Cutters ground for Lathe will be furnished.*

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
FORGED-CUTTER TOOL HOLDERS
FOR
BORING-MILL AND TURRET-LATHE

"THE HOLDERS THAT HOLD"



Furnished with Square Head Cam, and Finished Wrench

These Holders are made of special Alloy Steel, heat-treated for strength and rigidity. They are suitable for both right and left hand cutters. For general description, see page 117.

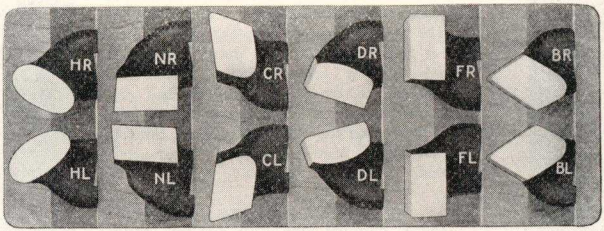
All "Vulcan" Forged-Cutters No. 105 are adapted for use in Holders Nos. 185 and 185B; Cutters No. 106 in Holder No. 186—see previous page.

No.	Holder, Size	Height from Point of Cutter to Bottom of Shank	Cutter Shank Diameter	PRICE		No
				Extra Cams, Each	Holder *Without* Cutter	
185	1 1/4 x 1 1/4 x 6 3/4	2 9/16	11/16	$ .68	$ 7.00	**185**
185B	1 1/4 x 1 1/2 x 6 3/4	2 9/16	11/16	.68	7.00	**185B**
186	1 1/2 x 1 1/2 x 7 3/4	2 7/8	25/32	.68	9.50	**186**

Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
HIGH SPEED STEEL FORGED-CUTTERS
FOR
BORING-MILL AND TURRET-LATHE TOOL HOLDERS



The angular seat on the rear of the Cutter's shoulder permits the Locking-pin to force the heel, or step, of the shoulder directly against the Holder proper. This method of locking provides the necessary bearing to support the cutting-pressure and prevents all rocking movement of the Cutter itself.

Complete Cutter Sets supplied in lots of 12, packed in containers. If desired, Cutters will be supplied singly.

Cutter Marks	Style of Cutter	PRICE Cutters, Each		
		For Holder Number		
		185	185B	186
	Diameter of Cutter Shank	11/16	11/16	25/32
BL	Diamond Point, Left Hand	$ 3.55	$ 3.55	$ 5.00
BR	Diamond Point, Right Hand	3.55	3.55	5.00
CL	Offset Diamond Point, Left Hand	3.55	3.55	5.00
CR	Offset Diamond Point, Right Hand	3.55	3.55	5.00
DL	Roughing, Left Hand	3.55	3.55	5.00
DR	Roughing, Right Hand	3.55	3.55	5.00
FL	Offset Flat Nose, Left Hand	3.55	3.55	5.00
FR	Offset Flat Nose, Right Hand	3.55	3.55	5.00
HL	Hog Nose, Left Hand	3.55	3.55	5.00
HR	Hog Nose, Right Hand	3.55	3.55	5.00
NL	Facing, Left Hand	3.55	3.55	5.00
NR	Facing, Right Hand	3.55	3.55	5.00

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
FORGED-CUTTER PLANER-TOOL HOLDERS

No. 128

"THE HOLDERS THAT HOLD"

For general description, see page 117

"Vulcan" Planer-Tool Holders are made in either Straight or Bent pattern. The Straight type is furnished in two forms for heavy and for light duty, as specified below. They are of similar design and material to the Lathe Tool Holders described on previous page, except that the cam is located on the side instead of on the top, permitting adjustment where the clearance is limited.

The Bent type Holders, being double ended, may be used with excellent results for fine finishing as well as for coarse, heavy work. For the latter purpose, however, and for work in places where clearance is limited, the Straight, single end type is recommended.

These Tool Holders accommodate "Vulcan" Forged-Cutters, Numbers 108, described on page 137.

Furnished with Square Head Cam and Finished Wrench

Nos. 148 & 168

No.	Holder, Size	Height from Point of Cutter to Bottom of Shank	Cutter Shank, Diameter	PRICE: Extra Cams, Each	PRICE: Holder *Without* Cutter	No.
		Bent, Double Ended, Tool Holder				
128	2 x 4 x 30	Bent 1/16 Straight 1 1/4	1	$ 2.50	$ 27.00	**128**
		Straight, Single Ended, For Heavy Duty				
148	2 x 4 x 30	4 1/4	1	$ 2.50	$ 18.00	**148**
		Straight, Single Ended, For Light Duty				
168	2 x 3 1/2 x 24	3 3/4	1	$ 2.50	$ 16.00	**168**

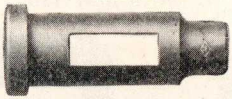
Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
TOOL POST FITTINGS

TOOL POSTS

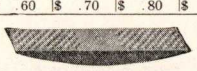
Unfinished



Openings Punched Out

Number	5	10	20	23	28	30	40	50	60
Extreme Length	2 15/16	4 1/16	4 9/16	5	5 3/16	5 1/4	6 5/16	7 3/8	8 3/4
Body Diameter	1 1/32	1 1/4	1 5/8	1 7/16	1 9/16	1 13/16	2 1/16	2 1/4	2 31/32
Length	2	2 7/8	3 1/4	3 1/2	3 11/16	3 3/4	4 3/8	5	6
Base Diameter	1 7/32	1 5/8	2 1/8	1 7/8	2 1/16	2 5/16	2 5/8	2 15/16	3 5/8
Thickness	9/16	1/4	7/16	5/16	5/16	1/2	9/16	5/8	3/4
Base to Opening	7/16	1/2	13/16	5/8	5/8	15/16	1 3/16	1 3/8	1 1/2
Opening Size	1 5/16 x 7/16	1 15/16 x 19/32	1 7/8 x 11/16	2 1/2 x 21/32	2 11/16 x 11/16	2 1/8 x 3/4	2 1/2 x 7/8	2 7/8 x 15/16	3 9/16 x 1
For Use with Wedge	5	10	15 & 18	15 & 18	15 & 18	18 & 20	30 & 40	60	
For Use with Ring	5	10	11	14	18	20	30 & 40	60	
PRICE	$ .35	$ .45	$ .60	$ .70	$ .80	$ .90	$ 1.30	$ 1.70	$ 3.40

TOOL POSTS WEDGES



For Changing Angles of Lathe Tools

Several sets of Dies are available for other similar Wedges. Blueprints and prices on application.

Number	5	10	11	15	18	20	30	40	60	65
Length	2 13/32	3	3 3/8	3 3/8	3 7/8	3 7/8	4 3/8	4 7/8	5 1/4	5 5/16
Width	13/32	9/16	1/2	5/8	5/8	11/16	3/4	13/16	15/16	7/8
Extreme Thickness	11/32	31/64	25/64	7/16	15/32	17/32	1/2	21/32	3/4	29/32
Radius	3	2 7/8	4 5/8	4 5/8	4 1/2	4 3/4	5 1/2	5 3/4	6	5
For Use with Post	5	10	20	20	20 & 30	30	40	40	50	
For Use with Ring	5	10	11	11	11 & 20	20	30	40	60	
PRICE	$ .08	$ .10	$ .10	$ 10	$ .12	$ .12	$ .13	$ .15	$ .18	$ .21

TOOL POST RINGS

For Changing Angles of Lathe Tools

Number	5	10	11	14	18	20	30	40	60
Diameter, Outside	2 1/4	2 15/16	3	3 3/16	3 7/16	3 1/2	3 1/2	4	4 1/2
Diameter, Hole	1 1/16	1 5/16	1 5/8	1 7/16	1 9/16	1 3/4	2	2	2 3/16
Thickness, Edge	3/8	7/16	7/16	5/8	11/16	9/16	3/4	3/4	3/4
Radius of Concave	3	2 7/8	4 5/8	4 5/8	4 1/2	4 3/4	5 1/2	5 3/4	6
For Use with Post	5	10	20	23	28	30	40	40	50
For Use with Wedge	5	10	11 & 15	18 & 20	18	18 & 20	30	40	60
PRICE	$ .14	$ .20	$ .22	$ .32	$ .40	$ .35	$ .44	$ .50	$ .65

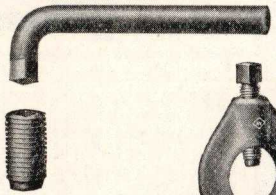
Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED LATHE DOGS

With Bent Tail

Safety Dog and Screw



Safety Screw and Wrench

Non-Safety Dog with Square Head Screw

Full description on opposite page.

Unless otherwise specified, Dogs with Safety Screws will be supplied

No.	Capacity	SCREWS						PRICE		No.
		Square Head			Safety			Safety Dog Wrench, Extra	Dog Complete with Either Screw	
		Size		Price, Each	Size		Price, Each			
		Diam.	Length Under Head		Diam.	Extreme Length				
1	3/8	5/16	1 1/4	$ .16	7/16	5/8	$ .20	$ .12	*$ 1.00	1
2	1/2	3/8	1 1/4	.20	9/16	13/16	.24	.14	* 1.10	2
3	3/4	7/16	1 5/8	.24	5/8	1 1/16	.30	.16	* 1.20	3
4	1	1/2	2	.30	11/16	1 1/4	.36	.16	* 1.40	4
5	1 1/4	1/2	2 1/4	.32	3/4	1 3/8	.42	.20	* 1.70	5
6	1 1/2	9/16	2 3/8	.36	13/16	1 5/8	.50	.24	* 2.00	6
7	1 3/4	5/8	2 1/2	.40	7/8	1 3/4	.60	.24	* 2.40	7
8	2	11/16	2 3/4	.46	1	1 7/8	.72	.30	* 2.80	8
9	2 1/2	11/16	3	.48	1 1/8	2	.86	.38	* 3.60	9
10	3	3/4	3 1/4	.54	1 1/4	2 1/8	1.04	.48	* 4.60	10
11	3 1/2	7/8	3 1/2	.64	1 3/8	2 1/2	1.26	.60	* 6.00	11
12	4	7/8	3 3/4	.70	1 1/2	2 5/8	1.50	.74	* 9.00	12
13	5	1	4 1/2	1.00	1 5/8	3 1/8	1.80	.90	* 16.00	13

*Unless otherwise specified, a Wrench will be supplied with Safety Dogs at extra price stated in table.

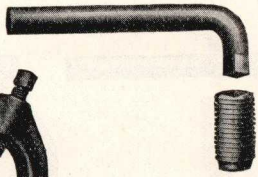
Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

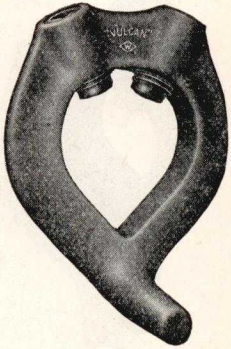
"VULCAN"
DROP-FORGED HEAVY SERVICE LATHE DOGS

With Bent Tail and Two Screws

Non-Safety Dog with Square Head Screws



Safety Screw and Wrench



Safety Dog and Screws

Safety-for-the-operator and better balance when on the lathe are material improvements which have been attained in this design.

The forgings are black lacquered. The Screws are of special steel, hardened and tempered, and are threaded U. S. Standard, except that those above 1 inch diameter have eight threads per inch.

By drilling and tapping for the different diameters, the Dogs may be furnished with either Safety or old style (non-safety) Set Screws, but the two types of Screws are not interchangeable, and the safety feature is eliminated if the old style Set Screws are used. Please use numbers and state which Screw is desired.

Unless otherwise specified, Dogs with Safety Screws will be supplied

No.	Capacity	SCREWS						PRICE		No.
		Square Head			Safety			Safety Dog Wrench, Extra	Dog with Either Screw	
		Size		Price, Each	Size		Price, Each			
		Diam.	Length Under Head		Diam.	Extreme Length				
112	4	7/8	3 3/4	$ .70	1 1/2	2 5/8	$ 1.50	$ .74	*$16.00	112
113	5	1	4 1/2	1.00	1 5/8	3 1/8	1.80	.90	* 24.00	113
114	6	1	4 1/2	1.00	1 3/4	3 1/2	2.30	1.10	* 34.00	114

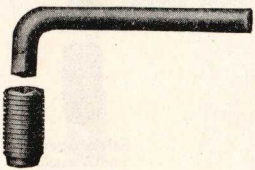
*Unless otherwise specified, a Wrench will be supplied with Safety Dogs at extra price stated in table.
Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED LATHE DOGS

With Straight Tail

Safety Dog and Screw



Safety Screw and Wrench

Non-Safety Dog with Square Head Screw

Full description on opposite page.

Unless otherwise specified, Dogs with Safety Screws will be supplied

No.	Capacity	SCREWS						PRICE		No.
		Square Head			Safety					
		Size			Size					
		Diam.	Length Under Head	Price, each	Diam.	Extreme Length	Price, each	Safety Dog Wrench, extra	* Dog complete with either Screw	
21	**3/8**	5/16	1 1/4	$ .16	7/16	5/8	$ .20	$ .12	*$ 1.00	**21**
22	**1/2**	3/8	1 1/4	.20	9/16	13/16	.24	.14	* 1.10	**22**
23	**3/4**	7/16	1 5/8	.24	5/8	1 1/16	.30	.16	* 1.20	**23**
24	**1**	1/2	2	.30	11/16	1 1/4	.36	.16	* 1.40	**24**
25	**1 1/4**	1/2	2 1/4	.32	3/4	1 3/8	.42	.20	* 1.70	**25**
26	**1 1/2**	9/16	2 3/8	.36	13/16	1 5/8	.50	.24	* 2.00	**26**
27	**1 3/4**	5/8	2 1/2	.40	7/8	1 3/4	.60	.24	* 2.40	**27**
28	**2**	11/16	2 3/4	.46	1	1 7/8	.72	.30	* 2.80	**28**
29	**2 1/2**	11/16	3	.48	1 1/8	2	.86	.38	* 3.60	**29**
30	**3**	3/4	3 1/4	.54	1 1/4	2 1/8	1.04	.48	* 4.60	**30**
31	**3 1/2**	7/8	3 1/2	.64	1 3/8	2 1/2	1.26	.60	* 6.00	**31**
32	**4**	7/8	3 3/4	.70	1 1/2	2 5/8	1.50	.74	* 9.00	**32**
33	**5**	1	4 1/2	1.00	1 5/8	3 1/8	1.80	.90	* 16.00	**33**

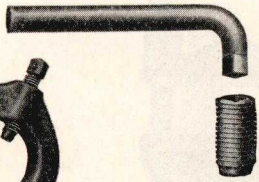
* Unless otherwise specified, a Wrench will be supplied with Safety Dogs at extra price stated in table. Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

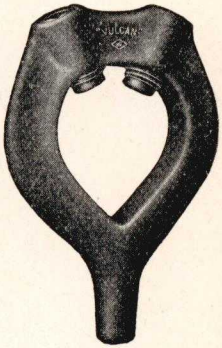
"VULCAN"
DROP-FORGED HEAVY SERVICE LATHE DOGS

With Straight Tail and Two Screws

Non-Safety Dog with Square Head Screws



Safety Screw and Wrench



Safety Dog and Screws

Safety-for-the-operator and better balance when on the lathe are material improvements which have been attained in this design.

The forgings are black lacquered. The Screws are of special steel, hardened and tempered, and are threaded U. S. Standard, except that those above 1 inch diameter have eight threads per inch.

By drilling and tapping for the different diameters, the Dogs may be furnished with either Safety or old style (non-safety) Set Screws. The two types of Screws, however, are not interchangeable, and the safety feature is eliminated if the old style Screws are used. Please use numbers and state which Screw is desired.

Unless otherwise specified, Dogs with Safety Screws will be supplied

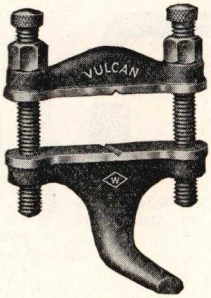
No.	Capacity	SCREWS						PRICE		No.
		Square Head			Safety					
		Size			Size			Safety Dog Wrench, extra	*Dog with either Screw	
		Diam.	Length Under Head	Price, each	Diam.	Extreme Length	Price, each			
132	**4**	7/8	3 3/4	$ .70	1 1/2	2 5/8	$ 1.50	$ .74	*$ 16.00	**132**
133	**5**	1	4 1/2	1.00	1 5/8	3 1/8	1.80	.90	* 24.00	**133**
134	**6**	1	4 1/2	1.00	1 3/4	3 1/2	2.30	1.10	* 34.00	**134**

* Unless otherwise specified, a Wrench will be supplied with Safety Dogs at extra price stated in table.

Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED CLAMP LATHE DOGS



Patented in U. S. A.

These are drop-forged from a strong, tough grade of carefully selected steel and are heat-treated after forging to increase further their stiffness and strength and reduce the liability of springing.

The Screws, threaded U. S. Standard, are made of a special grade of steel, and are hardened and tempered. The Nuts are case-hardened. Extra Screws and Nuts carried in stock.

The Nuts furnish ready means of arrangement for the minimum projection of Screws beyond the body of Dog and thus lessen the danger to the operator when tool is in use.

Packed two in a box for convenient shelving.

Number	Capacity		Screws		PRICE,	Number
	Maximum Opening	Distance Between Screws	Diameter	Length Under Head	Dog Complete	
61	**1 5/8**	**1 3/4**	5/16	2 3/4	$ 3.00	**61**
62	**1 7/8**	**2 1/4**	3/8	3 5/16	4.00	**62**
63	**2 1/2**	**2 3/4**	7/16	4 1/4	5.00	**63**
64	**3 1/4**	**3 1/2**	1/2	5 3/8	7.00	**64**

Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED MILLING MACHINE DOGS

With Flat, Bent Tail

These are designed for taper work carried between centers on milling machines; the flat tail works in the head-slot without the back-lash unavoidable in Dogs with taper tail. They serve also as a heavy pattern Lathe Dog.

The heads are made of sufficient size to permit re-tapping for one or two larger sizes of screws as the threads wear.

The Screws, threaded U. S. Standard are made of a special grade of steel and are hardened and tempered.

Number	Capacity	Screw		PRICE		Number
		Diameter	Length Under Head	Extra Screws, Each	Dog Complete	
42	**1/2**	3/8	1 1/4	$ .20	$ 1.10	**42**
43	**3/4**	7/16	1 5/8	.24	1.20	**43**
44	**1**	1/2	2	.30	1.40	**44**
45	**1 1/4**	1/2	2 1/4	.32	1.70	**45**
46	**1 1/2**	9/16	2 3/8	.36	2.00	**46**
47	**1 3/4**	5/8	2 1/2	.40	2.40	**47**
48	**2**	11/16	2 3/4	.46	2.80	**48**

Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"

DROP-FORGED HEAVY SERVICE "C" CLAMPS

These are drop-forged from a strong, tough grade of carefully selected steel and their form is such as to utilize the metal to the greatest advantage. Specially heat-treated after forging to further increase their stiffness and strength and reduce the liability of springing, they are the strongest "C" Clamp on the market.

The Screws, threaded U. S. Standard, are made of a special grade of steel and are hardened and tempered.

In respective order as per table, minimum capacities of Clamps with Standard Screws are approximately 0, 0, 11/16, 7/8, 1 5/16, 2, 2 1/2, 3 1/16, 4 1/4, 6 3/8, 7 5/8.

If Long Screws are used, the minimum capacity of all Clamps will be 0.

Unless otherwise specified, Clamps with Standard Screws will be furnished.

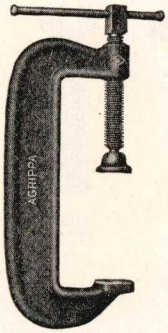
No.	Capacity	Depth of Throat from Center of Screw	Extreme Dimensions of Body		Standard Screw		PRICE			
							Extra Screws		Clamps Complete	
			Length	Width	Diam.	Length Under Head	Standard Each	Long Each	with Stand. Screw	with Long Screw
0	**3/4**	3/4	2 1/4	2	5/16	1 1/2	$ .20	$	$ 1.00	
1	**1 1/4**	1 1/8	3 1/4	2 3/4	3/8	2 1/4	.24		1.50	
1 1/2	**1 3/4**	1 1/2	4 1/4	3 5/8	1/2	2 1/4	.28	.80	2.50	$ 3.00
2	**2 1/4**	1 3/4	5 1/2	4 1/2	5/8	2 7/8	.40	1.16	3.50	4.25
3	**3 1/4**	2 3/8	7 1/4	5 3/4	3/4	3 3/4	.56	1.56	5.00	6.00
4	**4 1/2**	2 3/4	8 7/8	6 1/2	7/8	4 1/2	.76	2.00	6.50	7.75
5	**5 1/2**	3 1/8	10 3/8	7	7/8	5 3/8	1.00	2.50	8.00	9.50
6	**6 1/2**	3 3/8	12	7 7/8	1	5 7/8	1.30	3.10	10.00	11.80
8	**8 1/2**	3 3/4	14 3/8	8 1/2	1 1/8	7	1.70	4.20	14.00	16.50
10 1/2	**10 1/2**	4 1/8	16 7/8	9	1 1/8	7	1.70	5.10	19.00	22.40
12 1/2	**12 1/2**	4 1/2	19 3/8	9 3/4	1 1/4	8	2.40	7.20	25.00	29.80

Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"AGRIPPA"

DROP-FORGED GENERAL SERVICE "C" CLAMPS



The design of these lighter Clamps enables them to provide the service formerly rendered by the heavier and clumsier steel clamps made by other processes. They are drop-forged from a special grade of strong, tough steel and are heat-treated. This process increases still further their natural stiffness and strength and reduces any liability of springing.

The Screws, fitted with adjustable handle, are made of special steel, hardened and tempered; threaded U. S. Standard. The Swivels are drop-forged.

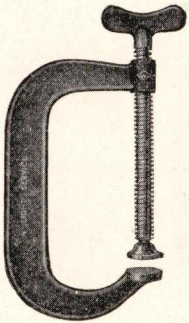
In respective order as per table, the minimum capacities of Clamps are approximately as follows: 5/8, 2 5/8, 4 11/16, 6 11/16, 8 11/16, 10, 13.

No.	Capacity	Depth of Throat from Center of Screws	Extreme Dimensions of Body		Screw		Size Handle		Approx. Weight Each, Lbs.	PRICE		No.
			Length	Width	Diam.	Length with Swivel	Diam.	Lgth.		Extra Screw, Handle and Swivel	Clamp Complete	
104	**4**	2 3/8	8 1/4	5 1/8	3/4	6	3/8	7	4 1/4	$ 1.40	$ 4.50	**104**
106	**6**	2 1/2	10 3/8	5 3/8	3/4	6	3/8	7	5 1/2	1.40	5.50	**106**
108	**8**	2 5/8	12 1/2	5 1/2	3/4	6	3/8	7	6	1.40	6.50	**108**
110	**10**	2 3/4	14 5/8	5 3/4	3/4	6	3/8	7	7 1/2	1.40	7.50	**110**
112	**12**	2 7/8	16 7/8	6	3/4	6	3/8	7	9 1/2	1.40	8.50	**112**
115	**15**	3 1/16	20 1/4	6 1/2	7/8	8 1/8	7/16	8	13 1/2	2.40	11.00	**115**
118	**18**	3 1/4	23 1/2	7	7/8	8 1/8	7/16	8	17	2.40	14.00	**118**

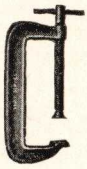
Weights given page 185.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"LIGHT SERVICE" DROP-FORGED "C" CLAMPS



Nos. 403, 404, 406, 408 and 410



Nos. 402 and 412

Especially designed for light machine shop service, body-makers, and kindred trades, these Clamps are best adapted for use in the various wood and metal manufacturing fields which do not require the extreme of strength provided by Williams' "Vulcan" and "Agrippa" patterns. They are superior substitutes for less reliable cast tools.

Drop-forged from an unusually strong special steel and heat-treated for maximum stiffness, they combine a deep throat of ample size with dependable strength at minimum weight.

The Screws are drop-forged in one piece, with no handle or wings to loosen, and provide a firm, solid lever, recessed and rounded for easy hand-grip. They are threaded specially for strength and rapid adjustment. Swivels are provided on all sizes.

In respective order, as below, Screws close to 0, 0, 0, 0, 2, 3, and 4 in.

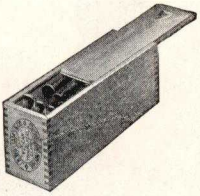
No.	Capacity	Depth of Throat from Center of Screw	Extreme Dimensions of Body		Screw		Approx. Weight each, lbs.	PRICE		No.
			Length	Width	Diam.	Length Over All		Screw and Swivel	Clamps Complete	
***402**	2	1 3/4	4 3/8	3 3/8	1/2	4 3/8	3/4	$ .60	$ 1.50	***402**
403	3	2 3/8	6 1/8	4 1/8	1/2	5 3/4	1 1/2	.70	1.80	**403**
404	4	2 3/4	7 5/8	4 3/4	5/8	8 1/8	2 1/4	.80	2.20	**404**
406	6	3 5/8	10 1/4	6	5/8	9 1/4	3 3/4	1.00	3.00	**406**
408	8	4 1/2	12 3/4	7	3/4	11	5 1/2	1.20	4.00	**408**
410	10	5 3/8	15 1/4	8 1/8	3/4	12	8 1/4	1.50	5.00	**410**
***412**	12	4	16 1/2	6 7/8	13/16	12 1/2	7 1/2	2.00	6.50	***412**

A special clamp, No. 444, 4″ capacity, with throat 1 1/2″ deep, can be furnished; details on request.

*These will be furnished in the design shown by smaller illustration until stock is exhausted.

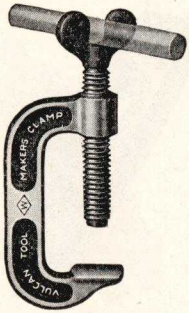
WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED TOOL-MAKERS' "C" CLAMPS



See Prices Per Set

Removable-Swivel Screw



These Clamps are drop-forged from a strong, tough grade of steel and are heat-treated after forging to increase further their strength and stiffness and reduce the liability of springing.

The Screws, with wings formed to permit use of lever, are supplied in two styles—Removable-Swivel and Plain. They are drop-forged from a special grade of steel and are hardened and tempered; threaded U. S. Standard.

Clamps are furnished in two conditions:—

Black are oil treated only.

Bright, surfaces and edges of clamp ground, panel black—see illustration. Packed singly in boxes or in sets if specified.

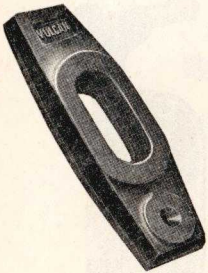
Unless otherwise specified, Bright Clamps with Swivel Screw will be furnished.

No.	Capacity	Depth of Throat	Extreme Dimensions		Screw, Plain		PRICE			No.
			Length	Width	Diam.	Length	Extra Screw	Clamp, Complete Black	Clamp, Complete Bright	
					WITH PLAIN SCREW					
201	**1**	11/16	2 1/8	1 1/2	5/16	1 11/16	$ .40	$ 1.00	$ 1.30	**201**
202	**2**	13/16	3 3/8	1 7/8	3/8	2 7/16	.50	1.30	1.60	**202**
203	**3**	15/16	4 1/2	2 1/8	3/8	3 3/16	.60	1.70	2.10	**203**
204	**4**	1 1/8	6 3/8	2 1/2	7/16	4 1/8	.80	2.50	3.00	**204**
Per Set	Clamps, (one of each size) in specially prepared Box, without extra charge,							6.50	8.00	**Per Set**
					WITH REMOVABLE-SWIVEL SCREW					
201	**1**	11/16	2 1/8	1 1/2	5/16	1 11/16	$ .90	$ 1.50	$ 1.80	**201**
202	**2**	13/16	3 3/8	1 7/8	3/8	2 7/16	1.00	1.80	2.10	**202**
203	**3**	15/16	4 1/2	2 1/8	3/8	3 3/16	1.20	2.30	2.70	**203**
204	**4**	1 1/8	6 3/8	2 1/2	7/16	4 1/8	1.50	3.20	3.70	**204**
Per Set	Clamps, (one of each size) in specially prepared Box, without extra charge,							$ 8.80	$10.30	**Per Set**

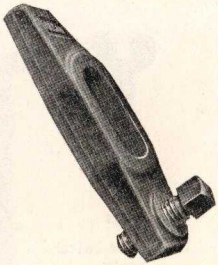
Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED STRAP CLAMPS



Plain Slot



Adjustable Step

Goose Neck

These forgings are made from a strong, tough grade of carefully selected steel and are heat-treated after forging to increase their strength and stiffness.

On Planer, Lathe, Drill Press, Milling and Boring Machine work they are time-saving and effective.

(Continued on following page)

PLAIN SLOT PATTERN

No.	Length	Width		Thickness		Slot; Min. Dimensions		PRICE	No.
		Ends	Center	Ends	Center	Length	Width		
54	**4**	1 3/16	1 5/8	1/2	3/4	1 3/8	11/16	$ .60	**54**
56	**6**	1 1/4	1 3/4	9/16	7/8	2 1/16	11/16	1.00	**56**
58	**8**	1 1/2	2 1/8	3/4	1 1/8	2 13/16	13/16	1 70	**58**
59	**10**	1 3/4	2 1/2	15/16	1 3/8	3 11/16	15/16	2.80	**59**

ADJUSTABLE STEP PATTERN

No.	L'gth	Width		Thickness		Slot; Min. Dimensions		Screws		PRICE		No.
		Ends	Center	Ends	Center	Length	Width	Diam.	Length Under Head	Extra Screws, each	Complete Clamps, each	
54 A	**4**	1 3/16	1 5/8	1/2	3/4	1 3/8	11/16	1/2	1 1/4	$ .28	$ 1.10	**54 A**
56 A	**6**	1 1/4	1 3/4	9/16	7/8	2 1/16	11/16	5/8	1 1/2	.36	1.70	**56 A**
58 A	**8**	1 1/2	2 1/8	3/4	1 1/8	2 13/16	13/16	3/4	1 3/4	.50	2.60	**58 A**
59 A	**10**	1 3/4	2 1/2	15/16	1 3/8	3 11/16	15/16	7/8	2 1/8	.70	4.00	**59 A**

GOOSE NECK PATTERN

No.	L'gth	Width		Thickness		Slot; Min. Dimensions		Neck Offset	PRICE	No.
		Ends	Center	Ends	Center	Length	Width			
74	**4**	1 3/16	1 5/8	3/8 & 1/2	3/4	15/16	11/16	13/16	$ 60	**74**
76	**6**	1 1/4	1 3/4	7/16 & 9/16	7/8	1 11/16	11/16	15/16	1 00	**76**
78	**8**	1 1/2	2 1/8	9/16 & 3/4	1 1/8	2 7/16	13/16	1 1/8	1.70	**78**

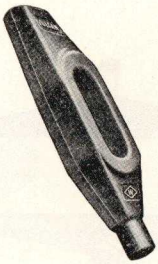
Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"

DROP-FORGED STRAP CLAMPS

Finger, Double End



Finger, Single End

"U" Pattern

(Continued from previous page)

Because of draft or taper on the edges of forgings, minimum dimensions of slot are given in table.

FINGER PATTERN, DOUBLE END

No.	Length	Width Center	Thickness Center	Min. Diameter Hole	Finger Dimensions	PRICE	No.
30	**3**	1 1/2	5/8	11/16	1/2 x 1/2	$ .40	**30**
35	**3 1/2**	1 5/8	3/4	11/16	5/8 x 5/8	.50	**35**
40	**4**	1 13/16	7/8	13/16	3/4 x 3/4	.70	**40**

FINGER PATTERN, SINGLE END

No.	Length	Width		Thickness		Slot; Min. Dimensions		Finger Dimensions	PRICE	No.
		Flat End	Center	Flat End	Center	Length	Width			
44	**4**	1 3/16	1 5/8	7/16	3/4	1 3/8	11/16	1/2 x 1/2	$ .60	**44**
46	**6**	1 1/4	1 3/4	1/2	7/8	1 15/16	11/16	5/8 x 5/8	1.00	**46**
48	**8**	1 1/2	2 1/8	5/8	1 1/8	2 9/16	13/16	3/4 x 3/4	1.70	**48**

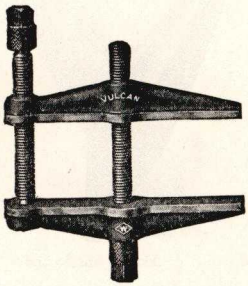
"U" PATTERN

No.	Length	Maximum Width	Thickness	Slot; Min. Dimensions		Finger Dimensions	PRICE	No.
				Length	Width			
64	**4 1/2**	1 3/4	3/4	3 1/2	11/16	1/2 x 1/2	$ .60	**64**
66	**6 5/8**	2	7/8	5 1/2	11/16	5/8 x 5/8	1.00	**66**
68	**8 3/4**	2 1/2	1 1/8	7 3/8	13/16	3/4 x 3/4	1.70	**68**

Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED MACHINISTS' CLAMPS



These Clamps are drop-forged from a strong, tough grade of carefully selected steel and are heat-treated to further increase their strength and reduce the liability of springing.

The knurled portion of the hardened and tempered Screws permits rapid and easy adjustment.

The edges of the jaws are ground bright, thus adding to the appearance of the Clamp.

When ordering extra Screws specify whether for *end* or *center*; lengths given are under-head dimensions and prices are for each of either screw.

Each Clamp is packed in a box for convenient shelving.

No.	Capacity		Screws				PRICE		No.
	Maximum Opening	Length Jaw from Screw	End		Center		Extra Screws Each	Complete Clamp	
			Diam.	Length	Diam.	Length			
301	**1 1/4**	**1 3/4**	5/16	2 1/8	5/16	2 5/8	$ .50	$ 3.00	**301**
302	**2 1/4**	**2 1/4**	3/8	3 1/4	3/8	3 15/16	.70	4.00	**302**
303	**3 1/4**	**2 3/4**	7/16	4 5/8	7/16	5 1/4	1.00	5.00	**303**
304	**4 1/4**	**3 1/4**	1/2	5 3/4	1/2	6 1/2	1.40	6.00	**304**

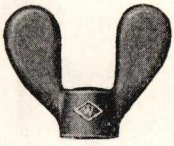
Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DROP-FORGED THUMB NUTS

Blank, or Tapped

A



B

These are drop-forged from steel and are furnished either Blank or Tapped; blanks are tumbled smooth.

In stock tapped U. S. Standard threads. "V" and Whitworth Standards furnished at regular prices; other threads to order. Unless otherwise specified, orders for Tapped Nuts will be supplied with U. S. Standard threads.

Tapped Nuts have base faced at right angle to hole.

Special sizes and shapes and Tobin Bronze Nuts to order.

When tapping is ordered, a commercial product is furnished. If additional accuracy is required an extra charge, consistent with the special requirements, will be made.

When ordering indicate pattern (A or B) by letter. Unless otherwise specified, Blanks will be furnished.

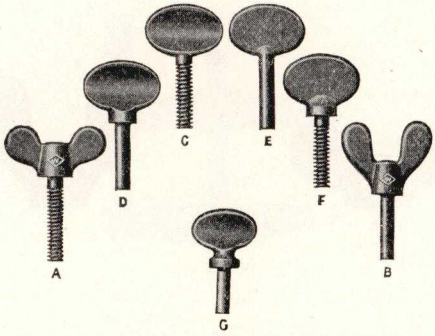
For Bolt; Size	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
U. S. Std. Threads	32	24	20	18	16	14	13	12	11	10
Diameter, Top	1/4	5/16	3/8	7/16	17/32	5/8	21/32	3/4	13/16	15/16
PRICE, per 100,										
Blank	$ 3.50	4.00	4.50	5.20	6.50	8.00	10.00	12.00	14.50	21.00
Tapped U. S. Standard, unless otherwise specified	$ 9.00	10.00	11.00	13.00	16.00	20.00	25.00	30.00	34.00	46.00

Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DROP-FORGED THUMB SCREWS

Blank, or Threaded



See List opposite page

Drop-forged from steel: Blanks are tumbled smooth. Special sizes and shapes and Tobin Bronze Screws to order.

Type G is made in 1/4, 5/16 and 3/8 inch diameters in all regular lengths.

Dies for the following Screws have not yet been made, consequently these sizes are not now carried in stock; 7/16 inch diameter Type B, 9/16 inch diameter Types A, B, E and F, 5/8 inch diameter Types E and F, 3/4 inch diameter Types A, B, D, E and F.

Threaded Thumb Screws, except Types C and E, over 4 inches long have threads running up only 4 inches.

Lengths, longer than those listed, can be furnished specially from available dies; intermediate lengths take price of next longer lengths, plus an extra charge for cutting. Electric Welding to order only.

In stock with U. S. Standard threads. "V" and Whitworth Standards furnished at regular prices; other threading to order. Unless otherwise specified, Threaded Screws will be supplied with U. S. Standard threads.

When ordering indicate pattern by letter. Unless otherwise specified, Blanks will be furnished.

When threading is ordered, a commercial product is furnished. If additional accuracy is required an extra charge, consistent with the special requirements, will be made.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

DROP-FORGED THUMB SCREWS

BLANK, OR THREADED

See illustrations on opposite page.

Unless otherwise specified, Blanks will be furnished.

BLANK, Price per 100

Length Under Head	Diameter Screw and U. S. Standard Threads per Inch										Length Under Head
	1/8 — 32	3/16 — 24	1/4 — 20	5/16 — 18	3/8 — 16	7/16 — 14	1/2 — 13	9/16 — 12	5/8 — 11	3/4 — 10	
	$	$	$	$	$	$	$	$	$	$	
1/4	6.80	7.40	8.00	9.00	10.20						1/4
1/2	7.10	7.70	8.30	9.30	10.50	12.00	14.00	18.00			1/2
3/4	7.40	8.00	8.60	9.60	10.80	12.40	14.40	18.50			3/4
1	7.70	8.30	8.90	9.90	11.10	12.80	14.80	19.10	24.50	40.00	1
1 1/4	8.00	8.60	9.20	10.20	11.40	13.20	15.30	19.80	25.50	41.00	1 1/4
1 1/2	8.30	8.90	9.50	10.60	11.80	13.70	15.80	20.60	26.60	42.10	1 1/2
1 3/4		9.20	9.80	11.00	12.20	14.20	16.40	21.50	27.80	43.40	1 3/4
2		9.60	10.20	11.40	12.60	14.70	17.00	22.50	29.10	44.90	2
2 1/4			10.60	11.80	13.00	15.30	17.70	23.60	30.50	46.40	2 1/4
2 1/2			11.00	12.20	13.40	15.90	18.40	24.80	32.00	48.40	2 1/2
2 3/4			11.40	12.60	13.90	16.50	19.20	26.10	33.60	50.40	2 3/4
3			11.80	13.00	14.40	17.20	20.20	27.50	35.30	52.70	3
3 1/2				13.80	15.40	18.60	22.60	30.30	38.90	57.50	3 1/2
4				14.60	16.60	20.40	25.60	34.00	44.00	63.60	4

THREADED, Price per 100

Unless otherwise specified, U. S. Standard Threads will be furnished.

	$	$	$	$	$	$	$	$	$	$	
1/4	10.80	11.40	12.50	14.00	16.20						1/4
1/2	11.30	11.90	13.00	14.50	16.70	19.20	22.60	29.50			1/2
3/4	11.80	12.40	13.50	15.00	17.20	19.90	23.30	30.30			3/4
1	12.40	13.00	14.10	15.60	17.80	20.70	24.10	31.30	40.10	62.00	1
1 1/4	13.00	13.60	14.70	16.20	18.40	21.60	25.10	32.60	41.70	63.60	1 1/4
1 1/2	13.70	14.30	15.40	17.00	19.20	22.70	26.20	34.00	43.40	65.40	1 1/2
1 3/4		15.00	16.10	17.90	20.10	23.80	27.50	35.50	45.20	67.50	1 3/4
2		15.90	17.00	18.80	21.00	24.90	28.80	37.30	47.30	69.90	2
2 1/4			17.90	19.70	22.00	26.10	30.20	39.20	49.60	72.40	2 1/4
2 1/2			18.80	20.60	23.00	27.30	31.60	41.20	52.00	75.60	2 1/2
2 3/4			19.70	21.60	24.10	28.50	33.10	43.30	54.50	79.00	2 3/4
3			20.60	22.60	25.20	29.80	34.80	45.50	57.20	82.70	3
3 1/2				24.60	27.40	32.60	38.90	50.10	63.10	90.70	3 1/2
4				26.70	30.00	36.00	44.10	56.00	71.00	100.40	4

Weights given page 186.

WILLIAMS
SUPERIOR · DROP-FORGED · TOOLS

"VULCAN"
WELDLESS EYE BOLTS

PLAIN PATTERN

Blank or Threaded

These Eye Bolts are specially heat-treated, after forging, to further increase their strength and toughness and reduce the liability of breakage.

To insure proper service at listed capacity, every Eye Bolt, after heat-treatment, is proof tested before threading to *fifty per cent beyond* its rated "Safe Working Load."

Each Eye Bolt so tested is stamped **O** near its piece number which appears in raised letters on the forging and hence can be readily identified as "*proof-tested.*"

U. S. Standard Threaded Eye Bolts of Standard length are in stock; prices for these are for either U. S. or Whitworth Standard Threads; special threads extra.

(*Continued on following page*)

When ordering please state whether Blank or Threaded are desired; if not specified, Blank (shank not threaded) will be sent.

No.	Shank			Diameter Eye		Capacity, Net Tons			PRICE		
									Blank		Thread
	Diameter	Standard Length Under Eye	Maximum Length in Stock	Inside	Outside	Safe Working Load	Average Load at Elastic Limit	Approximate Breaking Strain	Standard Length	Extra for Length up to Max.	Standard Length
3	**3/8**	1 1/4	4 1/2	1	1 21/32	.7	1.4	3.	$ .11	$ .11	$ .16
4	**7/16**	1 3/8	4 1/2	1 3/32	1 27/32	1.	2.	4.	.12	.12	.18
5	**1/2**	1 1/2	4 1/2	1 3/16	2 1/16	1.3	2.5	5.	.14	.14	.21
6	**9/16**	1 5/8	4 1/2	1 9/32	2 9/32	1.5	3.	6.	.17	.17	.25
7	**5/8**	1 3/4	4 1/2	1 3/8	2 1/2	2.	4.	8.	.22	.22	.32
8	**3/4**	2	5	1 1/2	2 13/16	3.	6.	12.	.30	.24	.42
9	**7/8**	2 1/4	5	1 11/16	3 1/4	3.5	7.	16.	.40	.26	.55
10	**1**	2 1/2	5	1 13/16	3 9/16	4.	8.	20.	.55	.30	.74
11	**1 1/8**	2 3/4	5	2	4	5.	10.	23.	.80	.35	1.04
12	**1 1/4**	3	6	2 3/16	4 7/16	7.5	15.	33.	1.15	.50	1.45
14	**1 1/2**	3 1/2	6	2 1/2	5 3/16	9.	18.	42.	2.00	.65	2.50
15	**1 3/4**	3 3/4	6	2 7/8	6 1/16	11.	21.	53.	3.00	.80	3.75
16	**2**	4	6	3 1/4	6 7/8	13.	25.	68.	4.25	1.00	5.30
17	**2 1/2**	5	6	4	8 9/16	16.	32.	85.	7.00	.75	8.80

Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
WELDLESS EYE BOLTS

SHOULDER PATTERN

Blank or Threaded

(*Continued from previous page*)

On Threaded Eye Bolts of Shoulder Pattern the thread runs within 1/8 to 3/8 inch of shoulder, which is faced.

Tobin Bronze Eye Bolts for marine work from standard or special dies to order in quantities; prices on application.

Prices given for Special Eye Bolts on receipt of drawings or models and specifications.

Prices for Eye Bolts of "Extra Lengths" apply only to forgings which may be in stock at time ordered.

Bolts of greater lengths of shank can be supplied to order by either the drop-forging or the electric-welding process, as may be specified.

When ordering please state whether Blank or Threaded are desired; if not specified, Blank (shank not threaded) will be sent.

No.	Shank		Maximum Length in Stock	Diameter Eye		Capacity, Net Tons			PRICE		
									Blank		Thrd.
	Diameter	Standard Length Under Shldr.		Inside	Outside	Safe Working Load	Average Load at Elastic Limit	Approximate Breaking Strain	Standard Length	Extra for Length up to Max.	Standard Length
21	1/4	1	3	3/4	1 3/16	.2	.5	1.5	$ .09	$ .09	$ .14
22	5/16	1 1/8	4	7/8	1 7/16	.4	.9	2.	.10	.10	.15
23	3/8	1 1/4	4 1/2	1	1 21/32	.7	1.4	3.	.11	.11	.16
24	7/16	1 3/8	4 1/2	1 3/32	1 27/32	1.	2.	4.	.12	.12	.18
25	1/2	1 1/2	4 1/2	1 3/16	2 1/16	1.3	2.5	5.	.14	.14	.21
26	9/16	1 5/8	4 1/2	1 9/32	2 9/32	1.5	3.	6.	.17	.17	.25
27	5/8	1 3/4	4 1/2	1 3/8	2 1/2	2.	4.	8.	.22	.22	.32
28	3/4	2	5	1 1/2	2 13/16	3.	6.	12.	.30	.24	.42
29	7/8	2 1/4	5	1 11/16	3 1/4	3.5	7.	16.	.40	.26	.55
30	1	2 1/2	5	1 13/16	3 9/16	4.	8.	20.	.55	.30	.74
31	1 1/8	2 3/4	5	2	4	5.	10.	23.	.80	.35	1.04
32	1 1/4	3	6	2 3/16	4 7/16	7.5	15.	33.	1.15	.50	1.45
34	1 1/2	3 1/2	6	2 1/2	5 3/16	9.	18.	42.	2.00	.65	2.50
35	1 3/4	3 3/4	6	2 7/8	6 1/16	11.	21.	53.	3.00	.80	3.75
36	2	4	6	3 1/4	6 7/8	13.	25.	68.	4.25	1.00	5.30

Weights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

MISCELLANEOUS EYE BOLTS

WELDLESS

Type A

B 17, 25, 30, 35

Type B

These are furnished in two styles or types, A and B, and are carried in stock with shanks blank (not threaded), but will be supplied threaded to order at slight extra charge.

Full size drawings will be sent on request.

Type	No.	Shank		Diameter Eye		PRICE, Blank	Type	No.
		Diameter	Length	Inside	Outside			
A	1	1/4	3/4	3/8	3/4	$ .07	A	1
	10	3/8	3	3/4	1 3/8	.12		10
	12	3/8	3	3/8	1	.12		12
	11	7/16	2 3/16	1 7/32	2 7/32	.30		11
	13	7/16	2 3/4	5/8	1 3/8	.14		13
A	14	15/32	1 5/8	1/2	1/4	.11	A	14
	15	1/2	2	9/16	1 1/4	.11		15
	16	1/2	3/4	1 3/8	2 3/8	.26		16
	17	1/2	4	1	1 3/4	.17		17
	20	9/16	2	5/8	1 1/2	.14		20
A	25	5/8	1 3/4	7/8	1 5/8	.14	A	25
	26	5/8	*1 3/4	1 1/8	2	.20		26
	40	13/16	3 1/4	3/4	2 1/8	.35		40
	55	1	1 5/16	7/8	2 3/8	.35		55
	58	1 1/16	4 1/8	1 1/8	2 7/8	.65		58
B	1	1/4	1/2	3/8	3/4	.05	B	1
	4	5/16	3	5/16	15/16	.12		4
	5	3/8	6	1/2	1 1/8	.25		5
	10	7/16	1 1/8	1	1 3/4	.11		10
	15	1/2	*1 1/2	13/16	1 13/16	.14		15
B	16	1/2	3 1/4	7/16	1 7/16	.15	B	16
	17	†1/2	1 3/4	1/2	1 1/8	.10		17
	25	†5/8	2 3/8	1/2	1 1/4	.12		25
	26	5/8	2 3/4	11/16	1 11/16	.15		26
	27	5/8	3/4	1 1/2	2 1/2	.26		27
B	30	†11/16	2 1/2	9/16	1 7/16	.14	B	30
	35	†3/4	2 3/4	5/8	1 5/8	.16		35
	45	7/8	4 1/8	1 1/8	2 3/8	.35		45
	50	15/16	*5	1 1/8	2 3/8	.55		50
	55	1	2 3/4	3/4	2	.30		55

†Shanks of B 17, 25, 30 and 35 are 7/16, 1/2, 9/16 and 5/8 inch in diameter for 3/4, 1, 1 and 1 1/8 inch from end respectively, as illustrated above.

*Can be furnished longer if desired, at extra charge.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED SWIVELS
For Hoist Hooks

OPEN PATTERN
For Welding

CLOSED PATTERN
Weldless

These are made of a fine grade of mild steel suitable for welding and are designed for use with "Vulcan" Hooks of corresponding numbers, as listed.

The Basket or Hub is made solid, requiring drilling before use, and the arms of Open Pattern must be welded together to form a link after the shank of the Hook has been inserted and secured.

Heat-treated, when desired, to increase their strength and toughness and reduce the liability of breakage—at slight extra cost.

No.	For "Vulcan" Hook, Number	Extreme Dimensions		Basket			Arms		PRICE	No.
		Length	Width	Length	Large Diam.	Small Diam.	Diam.	Length		
Open Pattern										
4	4	3 7/16	2	7/8	1 1/2	1 3/16	3/8	2 1/2	$ .25	**4**
5	5	3 7/8	2 1/4	1 1/16	1 5/8	1 1/4	7/16	2 3/4	.30	**5**
6	6	4 3/8	2 1/2	1 5/16	1 7/8	1 3/8	1/2	3	.38	**6**
7	7	4 3/4	2 3/4	1 7/16	2 1/16	1 1/2	9/16	3 1/4	.48	**7**
8	8	6	3 3/16	1 9/16	2 1/4	1 3/4	5/8	4 3/8	.60	**8**
9	9	6 1/2	3 1/2	1 7/8	2 3/4	2 3/16	11/16	4 1/2	.90	**9**
Closed Pattern										
104	4	2 3/4	2	7/8	1 1/2	1 3/16	3/8		$ .25	**104**
106	6	3 3/4	2 1/2	1 5/16	1 7/8	1 3/8	1/2		.38	**106**
107	7	4 1/8	2 3/4	1 7/16	2 1/16	1 1/2	9/16		.48	**107**
108	8	4 5/8	3 3/16	1 9/16	2 1/4	1 3/4	5/8		.60	**108**

eights given page 186.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"

DROP-FORGED HOIST HOOKS

With Shank

These Hooks are specially heat-treated after forging to increase their strength and toughness and reduce the liability of breakage.

To insure proper service at listed capacity every Hook, after heat treatment, is proof-tested to *fifty per cent beyond* its rated "Safe Working Load."

(*Continued on next page*)

All Shanks are milled $+\frac{1}{64}$ inch in diameter.

†Shanks of Nos. 13, 14, 15, 15A and 16 can be made longer if desired at an additional charge of 28, 36, 50, 60 and 70 cents per extra inch or fraction thereof, respectively.

*15A and 16A Hooks are made from alloy steel.

For Swivels, see previous page.

No.	Shank		Opening, or Throat	Extreme Dimensions		Capacity, Net Tons			PRICE
	Diam.	Length		Length	Width	Safe Working Load	Average Load at Elastic Limit	Approximate Load Required to Straighten out	
2	1/2	2	1	5	2 7/8	.5	.9	1.9	$ .32
3	9/16	2 1/4	1 1/16	5 1/2	3 1/8	.6	1.2	2.3	.37
4	5/8	2 1/2	1 1/8	6	3 1/2	.7	1.5	3.	.44
5	3/4	2 3/4	1 1/4	6 3/4	3 7/8	1.2	2.5	5.7	.58
6	7/8	3	1 3/8	7 1/2	4 3/8	1.7	3.5	7.	.85
7	1	3 1/4	1 1/2	8 1/4	4 7/8	2.1	4.2	8.5	1.25
8	1 1/8	3 1/2	1 3/4	9 1/4	5 5/8	2.5	5.4	10.	1.80
9	1 1/4	3 3/4	1 7/8	10 1/4	6 3/8	3.	6.2	13.	2.45
10	1 3/8	4	2 1/16	11	6 7/8	4.	8.	17.	3.20
11	1 1/2	4 1/4	2 1/4	12	7 1/2	4.7	9.	19.	4.10
12	1 5/8	4 1/2	2 1/2	13	8 1/4	5.5	11.	26.	5.60
13	1 3/4	† 5	3	14 1/2	9 1/4	6.8	13.	32.	7.80
14	2	† 5 1/2	3 3/8	16	11	8.	17.	35.	12.00
15	2 3/8	† 6	4	17 7/8	13 1/2	11.	21.	48.	23.00
***15A**	2 3/8	† 6	4	17 7/8	13 1/2	15.	25.	55.	39.00
16	2 3/4	† 7	4 1/2	21 1/2	15	20.	40.	80.	60.00
***16A**	2 3/4	† 7	4 1/2	21 1/2	15	25.	50.		70.00

Weights giyen page 187.

WILLIAMS
SUPERIOR · DROP-FORGED · TOOLS

"VULCAN"

DROP-FORGED HOIST HOOKS

WITH EYE—WELDLESS

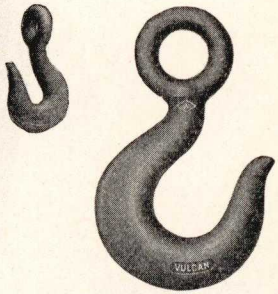
(*Continued from previous page*)

Each Hook so tested is stamped **O** near its piece number, which appears in raised letters on the forging and hence can be readily identified as "*proof-tested.*"

For Safety Chains on railroad cars, a Hook, approximately No. 27 in size and with eye at right angle, can be furnished to order in reasonable quantities; see small illustration. Full size drawing on request.

Tobin Bronze Hooks from standard or special dies to order in quantities; prices on application.

*36A Hook is made from alloy steel.



No.	Diameter of Eye		Opening, or Throat	Extreme Dimensions		Capacity, Net Tons			PRICE
	Inside	Outside		Length	Width	Safe Working Load	Average Load at Elastic Limit	Approximate Load Required to Straighten out	
22	3/4	1 1/2	1	4 3/8	2 7/8	.5	.9	1.9	$ .36
23	7/8	1 3/4	1 1/16	4 7/8	3 1/8	.6	1.2	2.3	.43
24	1	2	1 1/8	5 3/8	3 1/2	.7	1.5	3.	.53
25	1 1/8	2 1/4	1 1/4	6 3/16	3 7/8	1.2	2.5	5.7	.73
26	1 1/4	2 1/2	1 3/8	6 7/8	4 3/8	1.7	3.5	7.	1.05
27	1 3/8	2 3/4	1 1/2	7 5/8	4 7/8	2.1	4.2	8.5	1.50
28	1 1/2	3	1 3/4	8 9/16	5 5/8	2.5	5.4	10.	2.10
29	1 5/8	3 1/4	1 7/8	9 9/16	6 3/8	3.	6.2	13.	2.85
30	1 3/4	3 1/2	2 1/16	10 3/8	6 7/8	4.	8.	17.	3.70
31	2	4	2 1/4	11 1/2	7 1/2	4.7	9.	19.	4.70
32	2 3/8	4 5/8	2 1/2	13	8 1/4	5.5	11.	26.	6.40
33	2 3/4	5 1/4	3	14 3/4	9 1/4	6.8	13.	32.	9.40
34	3 1/8	6 1/8	3 3/8	16 3/4	11	8.	17.	35.	18.50
35	3 1/2	7	4	19 1/8	13 1/2	11.	21.	48.	35.00
36	4	8 1/2	4 1/2	22 3/4	15	20.	40.	80.	86.00
*36A	4	8 1/2	4 1/2	22 3/4	15	25.	50.		100.00

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
WIRE ROPE SOCKETS

CLOSED PATTERN—WELDLESS

These are drop-forged from a fine grade of steel, making them superior in strength and finish to the heavier hand-made product. Numerous tests show their strength is greater than that of the strongest wire rope made.

No.	Size Rope	Extreme Length	Basket			PRICE	No.
			Length	Large Diameter Outside	Small Diameter Outside		
2	1/4	3 5/8	1 5/8	1 3/16	5/8	$ .60	2
3	5/16	3 5/8	1 5/8	1 3/16	5/8	.65	3
4	3/8	4 1/2	2	1 7/16	13/16	.75	4
5	7/16	4 1/2	2	1 7/16	13/16	.80	5
6	1/2	5 1/4	2 1/4	1 3/4	1	1.00	6
7	9/16	5 1/4	2 1/4	1 3/4	1	1.10	7
8	5/8	6 1/8	2 5/8	2	1 3/16	1.35	8
9	3/4	7	3	2 3/8	1 3/8	1.80	9
10	7/8	8	3 1/2	2 3/4	1 5/8	2.50	10
11	1	9 1/4	4	3 1/4	1 15/16	3.50	11
12	1 1/8	9 1/4	4	3 1/4	1 15/16	4.00	12
13	1 1/4	11 1/2	5	4	2 3/8	6.00	13
14	1 3/8	11 1/2	5	4	2 3/8	6.50	14
15	1 1/2	13	5 3/4	4 3/4	2 3/4	9.00	15
16	1 5/8	13	5 3/4	4 3/4	2 3/4	10.00	16

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
WIRE ROPE SOCKETS

OPEN PATTERN

These are drop-forged from a fine grade of steel, making them superior in strength and finish to the heavier hand-made product. Numerous tests show their strength is greater than that of the strongest wire rope made.

The Pins are made of a superior grade of steel to obtain high shearing strength.

Furnished regularly, complete with split-pin.

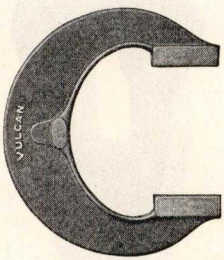
No.	Size Rope	Extreme Length	Basket			Diameter Pin	PRICE	No.
			Length	Large Diameter Outside	Small Diameter Outside			
102	**1/4**	3 7/16	1 5/8	1 3/16	5/8	1/2	$ .85	**102**
103	**5/16**	3 7/16	1 5/8	1 3/16	5/8	1/2	.90	**103**
104	**3/8**	4 3/8	2	1 7/16	13/16	5/8	1.20	**104**
105	**7/16**	4 3/8	2	1 7/16	13/16	5/8	1.25	**105**
106	**1/2**	5 1/8	2 1/4	1 3/4	1	3/4	1.60	**106**
107	**9/16**	5 1/8	2 1/4	1 3/4	1	3/4	1.70	**107**
108	**5/8**	6	2 5/8	2	1 3/16	7/8	2.10	**108**
109	**3/4**	6 7/8	3	2 3/8	1 3/8	1	2.70	**109**
110	**7/8**	7 7/8	3 1/2	2 3/4	1 5/8	1 1/4	3.40	**110**
111	**1**	9 1/8	4	3 1/4	1 15/16	1 1/2	4.50	**111**
112	**1 1/8**	9 1/8	4	3 1/4	1 15/16	1 1/2	5.00	**112**
113	**1 1/4**	11 3/8	5	4	2 3/8	1 7/8	8.00	**113**
114	**1 3/8**	11 3/8	5	4	2 3/8	1 7/8	8.50	**114**
115	**1 1/2**	13	5 3/4	4 3/4	2 3/4	2 1/4	11.50	**115**
116	**1 5/8**	13	5 3/4	4 3/4	2 3/4	2 1/4	12.50	**116**

Weights given page 187

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
EXTERNAL CALIPER GAUGES

SINGLE END—UNFINISHED



These are drop-forged from either Mild Steel, suitable for case-hardening, or from Tool Steel. We will supply directions for hardening, or will case-harden to order, but we cannot undertake machining.

They possess the same general characteristics as the Double End form on following page.

Three classes of gauges may be made from one forging:

1. Plain gauge; single dimension.
2. Gauge with any two dimensions within range of table limits.
3. Gauge of the "go on" and "not go on" variety; one combination.

Furnished Unfinished only. Unless otherwise specified, Mild Steel Gauges will be supplied.

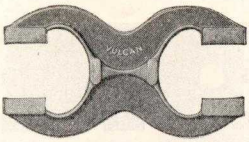
No.	Capacity	Extreme Dimensions		Dimensions of Measuring Pad		PRICE Unfinished	
		Length	Width	Length	Width	Mild Steel	*Tool Steel
22	**3** to **3 1/2**	5 1/8	5 3/4	1 1/2	1/2	$ 1.00	$ 2.00
24	**3 1/2** to **4**	5 11/16	6 1/2	1 11/16	17/32	1.20	2.40
26	**4** to **4 1/2**	6 1/4	7 3/16	1 13/16	17/32	1.45	2.90
28	**4 1/2** to **5**	6 13/16	7 13/16	2	9/16	1.75	3.50
30	**5** to **5 1/2**	7 7/16	8 5/8	2 1/8	9/16	2.10	4.20
32	**5 1/2** to **6**	7 15/16	9 3/16	2 9/32	9/16	2.50	5.00
34	**6** to **6 3/4**	8 13/16	10	2 1/2	23/32	3.25	6.50
36	**6 3/4** to **7 1/2**	9 11/16	11	2 3/4	3/4	4.00	8.00

*Tool Steel Gauges are stamped "T" to indicate their grade.

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
EXTERNAL CALIPER GAUGES
DOUBLE END—UNFINISHED



These are drop-forged from either mild steel, suitable for case-hardening, or tool steel. We will supply directions for hardening or will case-harden to order, but we cannot undertake machining.

The lettering-panels and sides of jaws are on same plane and may be finished by a single grinding or polishing operation.

The special size of the measuring-jaw or pad provides for unusual advantages; five classes of gauges may be made from one forging;

1. Plain gauge; same dimensions both ends.
2. Gauge with one end of exact dimension, other end for two limits allowed.
3. Gauge with any two dimensions within range of table limits.
4. Gauge of the "go on" and "not go on" variety; two combinations.
5. Plain gauge; four dimensions.

Furnished Unfinished only. Unless otherwise specified, Mild Steel Gauges will be supplied.

No.	Capacity	Extreme Dimensions		Dimensions of Measuring Pad		PRICE Unfinished	
		Length	Width	Length	Width	Mild Steel	*Tool Steel
2	1/4 to 3/8	2 1/8	15/16	15/32	3/16	$ .20	$ .40
4	3/8 to 1/2	2 1/2	1 1/8	1/2	3/16	.22	.44
6	1/2 to 3/4	3 1/8	1 9/16	19/32	1/4	.25	.50
8	3/4 to 1	3 5/8	1 15/16	21/32	9/32	.30	.60
10	1 to 1 1/4	4 3/8	2 3/8	3/4	9/32	.39	.78
12	1 1/4 to 1 1/2	5	2 3/4	27/32	5/16	.53	1.06
14	1 1/2 to 1 3/4	5 9/16	3 1/16	15/16	5/16	.72	1.44
16	1 3/4 to 2	6 5/16	3 1/2	1	5/16	.96	1.92
18	2 to 2 1/2	7 1/4	4 5/16	1 5/32	15/32	1.25	2.50
20	2 1/2 to 3	8 9/16	5 1/8	1 11/32	1/2	1.60	3.20

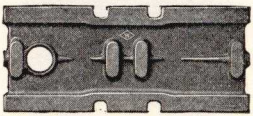
*Tool Steel Gauges are stamped "T" to indicate their grade.

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
INTERNAL CALIPER GAUGES

DOUBLE END—UNFINISHED



These are drop-forged from either mild steel, suitable for case-hardening, or Tool Steel. We will supply directions for hardening, or will case-harden to order, but we cannot undertake machining.

The lettering-panels and sides of jaws are on same plane and may be finished by a single grinding or polishing operation. Small bosses at ends of Gauges provide ready means of centering for lathe turning.

The special size of the measuring-jaw or pad, provides for unusual advantages; five classes of gauges may be made from one forging:

1. Plain gauge; same dimensions both ends.
2. Gauge with one end of exact dimensions, other end for two limits allowed.
3. Gauge with any two dimensions within range of table limits.
4. Gauge of the "go in" and "not go in" variety; two combinations.
5. Plain gauge; four dimensions.

Furnished Unfinished only. Unless otherwise specified, Mild Steel Gauges will be supplied.

No.	Capacity	Extreme Dimensions		Dimensions of Measuring Pad		Length Center Pad	PRICE Unfinished	
		Length	Width	Length	Width		Mild Steel	*Tool Steel
110	1 to 1 1/4	3	1 3/8	1	9/32	5/8	$ .30	$ .60
112	1 1/4 to 1 1/2	3 1/2	1 5/8	1 1/4	5/16	5/8	.40	.80
114	1 1/2 to 1 3/4	4 1/4	1 7/8	1 1/2	5/16	3/4	.55	1.10
116	1 3/4 to 2	4 7/8	2 1/8	1 3/4	5/16	13/16	.70	1.40
118	2 to 2 1/2	5 3/8	2 5/8	1 15/16	15/32	7/8	.90	1.80
120	2 1/2 to 3	6 3/8	3 1/8	2 5/16	1/2	1	1.20	2.40

*Tool Steel Gauges are stamped "T" to indicate their grade.

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
MACHINE HANDLE FORGINGS

UNFINISHED

With Smooth, Planished Surface

BALL PATTERN

Number	00	0	1	2	3	4	5	6	7
Extreme Length	2	2 1/4	2 3/4	3 1/4	3 7/8	4 1/2	5 1/8	5 7/8	6 5/8
Standard Length, Shank	1/2	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
Maximum Length, Shank	11/16	3/4	1	1 1/8	1 1/4	1 1/2	1 7/8	2	2 1/8
Diameter, Shank	5/16	11/32	13/32	15/32	15/32	17/32	19/32	11/16	3/4
PRICE	$ .10	$ .10	$ .11	$ .14	$ .17	$ .22	$ .27	$ .33	$ .40

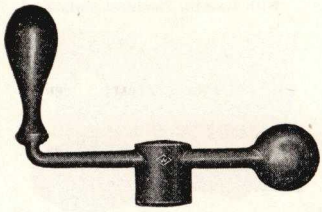
CONE PATTERN

Number	11	13	15	16
Extreme Length	3 1/2	4 1/2	5 1/2	6
Standard Length, Shank	1/2	3/4	7/8	1 1/8
Maximum Length, Shank	11/16	1 1/8	1 3/8	1 1/2
Diameter, Shank	3/8	7/16	1/2	9/16
PRICE	$ .14	$ .22	$ .27	$ .33

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

"VULCAN"
DROP-FORGED BALANCE HANDLES



Unfinished are plain forgings without any hole in hub.

Broached have holes finished, but are otherwise plain forgings.

Finished are broached, ground, polished, case-hardened all over and lacquered to prevent rusting.

The broached openings are made with corners slightly rounded to prevent breakage and a slight clearance is provided.

Holes are regularly finished to standard sizes given below but each forging admits of broaching to the maximum dimensions stated in table. Smaller openings than standard and special sizes can be broached to order Handles can also be supplied with round holes in hub; details on application.

No.	Length			Hub		Square Hole, Size Broached		Ball, Diam.	PRICE		
	C Hub to C Handle	Extreme	Handle Above Arm	Diam.	Length	Standard in Stock	Maximum to Order		Unfinished	Broached	Finished
512	1 1/4	3 5/16	1 15/16	7/8	3/4	7/16	1/2	7/8	$ .45	$ .75	$1.30
516	1 5/8	4	2 1/4	7/8	7/8	7/16	1/2	1 1/4	.50	.80	1.40
***520**	2	5	2 5/8	1	15/16	1/2	5/8	1 1/4	.55	.85	1.50
***522**	2 1/4	5 1/2	2 3/4	1 1/4	1	1/2	13/16	1 3/8	.60	.90	1.65
***525**	2 1/2	6	2 13/16	1 1/4	1 1/8	5/8	13/16	1 7/16	.70	1.05	1.90
529	2 7/8	7	3 5/16	1 1/4	1 1/4	5/8	13/16	1 1/2	.85	1.20	2.20
434	3 3/8	8	3 7/16	†1 1/2	7/8	5/8	3/4	1 3/4	1.20	1.55	2.80
439	3 7/8	9	3 1/2	†1 5/8	1 1/16	5/8	3/4	1 3/4	1.50	1.85	3.35

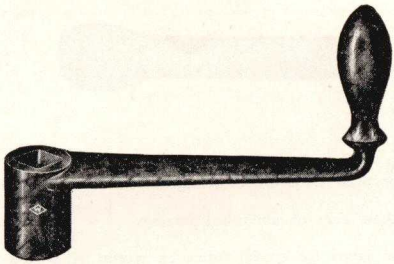
*Handle cone-shaped; see Crank Handle cut on opposite page.

† Hub is a sphere, flattened on top and bottom; full size drawing on request.

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

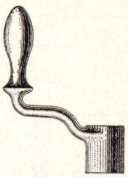
"VULCAN"
DROP-FORGED CRANK HANDLES



Unfinished are plain forgings without hole in hub.

Broached have holes finished and hubs recessed or counter-bored in free end, but are otherwise plain forgings.

Finished are broached, counterbored in free end of hub, ground, polished, case-hardened all over and lacquered to prevent rusting.



The broached openings are made with corners slightly rounded to prevent breakage and a slight clearance is provided.

Holes are regularly finished to standard sizes given below, but each forging admits of broaching to the maximum dimensions stated. Smaller openings than standard and special sizes, running by sixteenths from 1/2 to 1 inch inclusive, and thence by eighths, can be broached to order.

Hubs of Broached or Finished can be cut to shorter lengths and Handles will be offset (see small cut) if desired, at an additional charge.

No.	Length			Hub		Square Hole Size Broached		PRICE			No.
	Center to Center	Extreme	Handle above Arm	Diam.	Length	Standard in Stock	Maximum to Order	Unfinished	Broached	Finished	
00	**1 3/4**	2 5/8	2 3/8	1	1 1/4	1/2	5/8	$ .40	$ .70	$ 1.05	**00**
0	**2 1/4**	3 1/8	2 1/2	1	1 1/4	1/2	5/8	.45	.75	1.15	**0**
1	**3**	4	2 3/4	1 1/4	1 1/2	9/16	13/16	.50	.80	1.30	**1**
2	**3 1/2**	4 1/2	2 7/8	1 1/16	1 5/16	1/2	5/8	.50	.80	1.30	**2**
4	**4**	5 1/8	3 1/8	1 1/4	1 3/8	9/16	13/16	.60	.90	1.50	**4**
6	**5**	6 1/8	3 1/8	1 1/4	1 13/16	5/8	13/16	.75	1.10	1.80	**6**
8	**6**	7 1/8	3 1/8	1 1/4	1 15/16	11/16	13/16	.95	1.35	2.20	**8**
10	**7**	8 1/4	3 3/8	1 3/8	2 1/16	3/4	7/8	1.20	1.65	2.70	**10**
12	**8**	9 3/8	3 5/8	1 9/16	2 7/16	7/8	1	1.50	2.05	3.30	**12**
14	**9 1/8**	10 1/2	3 3/4	1 1/2	2 1/2	7/8	1	1.70	2.25	3.70	**14**
16	**10**	11 1/2	4	1 3/4	3	1	1 1/8	2.25	2.95	4.65	**16**

Weights given page 187.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ROD ENDS

Unfinished

These Rod or Stub Ends are drop-forged from mild steel which welds easily.

Dimensions show sizes of unfinished forgings.

Prices will be given for special forms on receipt of models or drawings and specifications stating quantity required.

No.	Shank		Head		PRICE		No.
	Diameter	Standard Length under Head	Diameter	Thickness	Standard Rod Ends	Extra Length per inch, or less	
0B	3/16	4 13/16	3/8	1/4	$ .17		0B
1B	1/4	2 11/16	9/16	1/2	.16		1B
1C	1/4	*5	5/8	1/4	.18	$ .03	1C
1D	1/4	2 3/8	7/16	1/4	.12		1D
1 1/2A	9/32	*5	11/16	9/32	.28	.03	1 1/2A
2A	5/16	*3 3/4	3/4	7/16	.19	.03	2A
2B	5/16	3 1/8	3/4	5/16	.09		2B
2C	5/16	5 3/4	3/4	3/8	.17		2C
2D	5/16	1 1/4	13/16	3/8	.10		2D
3A	3/8	*2	1	3/8	.10	.03	3A
3B	3/8	*3 3/8	21/32[1]	3/4	.36	.04	3B
3C	3/8	*3 1/2	13/16	3/8	.10	.04	3C
3D	3/8	*3 1/2	9/16	9/16	.19	.04	3D
3E	3/8	3 1/8	5/8	5/8	.18		3E
3F	3/8	1 1/8	3/4	3/8	.08		3F
3G	3/8	1 7/16	5/8	3/8	.09		3G
3H	3/8	1 5/8	3/4	3/8	.10		3H
3J	3/8	3 1/16	7/8	3/8	.14		3J
4B	7/16	*4 1/2	15/16	5/8	.19	.04	4B
4C	7/16	*3 3/8	13/16[2]	3/4	.31	.04	4C
4D	7/16	*2 1/2	5/8	1/2	.21	.04	4D
4E	7/16	1 3/4	13/16	5/16	19		4E

*Can be furnished longer if desired.
†Head off-set from center of shank 3/64 inch.
‡Hole in head, 1 1/4 inch diameter.

1 Largest Diameter Head, 1 inch.
2 Largest Diameter Head, 1 1/8 inch.
3 Largest Diameter Head, 1 9/16 inch.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

ROD ENDS

Unfinished

(*Continued*)

No.	Shank		Head		PRICE		No.
	Diameter	Standard Length under Head	Diameter	Thickness	Standard Rod Ends	Extra Length per inch, or less	
5A	1/2	*4 3/8	1	1/2	$ .17	$ .06	5A
†5B	1/2	2 3/8	3/4	3/4	.21		†5B
5C	1/2	3 1/16	7/8	7/16	.14		5C
5D	1/2	*2 7/8	3/4[2]	13/16	.19	.06	5D
5E	1/2	2 1/8	1 1/16	9/16	.12		5E
5F	1/2	2 1/16	13/16	11/32	.14		5F
5G	1/2	*12	1	7/16	.72	.06	5G
6A	9/16	2	1 1/16	7/16	.13		6A
6B	9/16	1	7/8	11/16	.31		6B
6C	9/16	2 3/8	15/16	3/8	.27		6C
6 1/2A	5/8	4 5/16	7/8	5/16	.36		6 1/2A
7A	5/8	*2 3/8	1 1/8	15/32	.16		7A
7B	5/8	*4 7/8	1 1/4	19/32	.28		7B
7C	5/8	1 1/2	1 3/4	5/8	.35		7C
7D	5/8	*7 1/2	1 5/32	21/32	.52	.08	7D
7E	5/8	*5 7/8	1 1/8[3]	1 1/16	.44	.08	7E
7F	5/8	*4 1/2	1 7/16	11/16	.43	.08	7F
7G	5/8	2 5/16	1	7/16	.30		7G
7H	5/8	3	1 1/16	7/16	.26		7H
9A	3/4	*3 7/8	1 3/4	5/8	.46	.08	9A
9B	3/4	*4	1 1/2	13/16	.37	.08	9B
9C	3/4	*4 3/8	1 1/8	3/4	.37	.08	9C
9D	3/4	3 7/8	1 1/8	1/2	.24		9D
11A	7/8	*3 1/2	1 1/2	1 1/16	.46	.10	11A
11B	7/8	*4	2	15/16	.64	.10	11B
11C	7/8	4 3/4	1 7/16	5/8	.37		11C
11D	7/8	4 3/4	1 1/8	1 5/32	.55	.10	11D
‡13A	1	*6	2 15/16	1 1/4	2.46	.12	‡13A
13B	1	*3 1/2	1 5/8	1 1/2	.72	.12	13B
13C	1	3 1/2	1 15/32	1 1/8	.63		13C
14A	1 1/16	*5 3/4	2 1/16	1 1/8	.60	.12	14A
15A	1 1/8	*5	1 13/16	1 1/8	.92	.14	15A
15B	1 1/8	*6	2 1/4	1 1/4	1.51	.14	15B
17A	1 1/4	*6	2 5/16	1 1/2	1.60	.16	17A
19A	1 3/8	7 1/4	2 3/8	1 1/2	1.72		19A

‡ * [3] See references on opposite page.

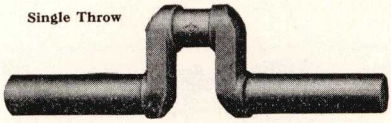
WILLIAMS

SUPERIOR DROP-FORGED

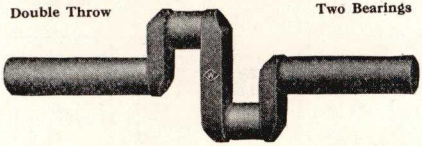
CRANK SHAFTS

Unfinished and Weldless

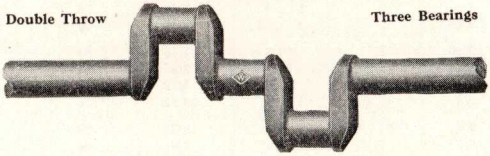
Single Throw



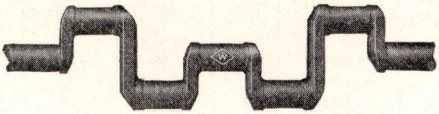
Double Throw **Two Bearings**



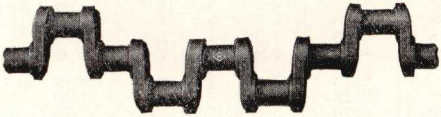
Double Throw **Three Bearings**



Four-Throw **Three Bearings**



Four-Throw **Five Bearings**



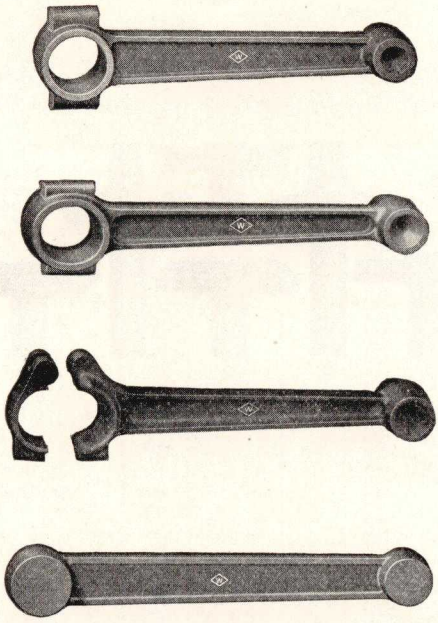
We have available many dies for single and multiple throw Crankshafts, and will quote prices on learning quantity and grade of steel (Alloy or straight carbon) desired. Send for full size blue-prints, which will be furnished on request.

We regularly heat treat all Crankshafts to increase their strength and toughness and to reduce the liability of breakage.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

CONNECTING RODS

Unfinished



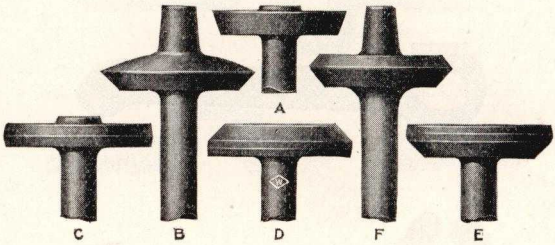
We have available many dies for various designs of Connecting Rods and will quote prices on learning quantity desired. To insure strength and service, these are usually drop-forged from a selected grade of stiff carbon steel but Alloy steel will be supplied if desired.

Send for full size blueprints which will be furnished on request.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

VALVE STEM FORGINGS

WELDLESS—UNFINISHED



We have available many dies for various designs of Valve Stems and will quote prices on learning quantity desired. They are regularly furnished to order from either Carbon or Alloy Steel and are usually subjected to a special heat-treatment after forging, which increases their strength and toughness and reduces the liability of breakage.

Send for full size blue-prints, which will be furnished on request.

Special Valve Stems to order.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCHES
(Carbon Steel)

For Whitworth Standard Nuts and Metric Measure Openings

NUMERICALLY ARRANGED

For Wrench Set with Whitworth Standard openings, see page 98.

*Furnished from stock on hand till supply is exhausted; thereafter on special order only.

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 40		
W00	1/8	
M00		8
W 0	3/16	
M 0		10
W 1	1/4	
M 1		12
W 2	5/16	
M 2		14
W 3	3/8	
M 3		16
M 3T		18
W 4	7/16	
M 4		20
W 5	1/2	
M 5		22
W 6	9/16	
M 6		25
Page 41		
W 7	5/8	
M 7		28
W 8	3/4	
M 8		30
M 8T		32
W 9	7/8	
M 9		35
M 9T		38
W10	1	
M10		40
M10T		42
W11	1 1/8	
M11		45
W12	1 1/4	
M12		50

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 41 Contd.		
W13	1 3/8	
W14	1 1/2	
W15	1 5/8	
W16	1 3/4	
W16A	1 7/8	
W17	2	
W18	2 1/4	
W19	2 1/2	
W20	3	
Page 42		
W21	1/8 & 3/16	
M21		6 & 8
W22	1/8 & 1/4	
W23	3/16 & 1/4	
M23		10 & 12
W24	3/16 & 5/16	
W25	1/4 & 5/16	
M25T		12 & 13
M25		12 & 14
W26	1/4 & 3/8	
W27	5/16 & 3/8	
M27		14 & 16
M27T		15 & 16
W28	5/16 & 7/16	
M28		16 & 18
W29	3/8 & 7/16	
M29T		18 & 19
M29		18 & 20
W30	3/8 & 1/2	
W31	7/16 & 1/2	
M31		20 & 22
M31T		21 & 23

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 43		
W32	7/16 & 9/16	
M32		22 & 25
W33	1/2 & 9/16	
M33		24 & 26
W34	1/2 & 5/8	
M34		23 & 27
W35	9/16 & 5/8	
M35		25 & 28
M35T		26 & 29
W36	9/16 & 3/4	
M36		28 & 30
W37	5/8 & 3/4	
M37		30 & 32
W38	5/8 & 7/8	
W39	3/4 & 7/8	
M39		32 & 35
W40	3/4 & 1	
W41	7/8 & 1	
M41		38 & 40
M41T		38 & 42
W42	7/8 & 1 1/8	
W43	1 & 1 1/8	
M43		42 & 45
W44	1 & 1 1/4	
M44		46 & 50
W45	1 1/8 & 1 1/4	
W46	1 1/8 & 1 3/8	
W47	1 1/4 & 1 3/8	
M47		50 & 55
W48	1 1/4 & 1 1/2	
W49	1 3/8 & 1 1/2	
*W51	1 1/2 & 1 5/8	
*W52	1 1/2 & 1 3/4	
*W53	1 5/8 & 1 3/4	
*W55	1 3/4 & 2	
*W56	1 3/4 & 2 1/4	
*W57	2 & 2 1/4	

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCHES
(Carbon Steel)

For Whitworth Standard Nuts and Metric Measure Openings

NUMERICALLY ARRANGED

For Wrench Set with Metric Measure openings, see page 98.

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 50		
W75	3/16 & 1/4	
M75		10 & 12
W77A	3/16 & 5/16	
W77D	1/4 & 5/16	
W79F	1/4 & 3/8	
W79D	5/16 & 3/8	
W79G	5/16 & 7/16	
M79		14 & 16
W81F	3/8 & 7/16	
W81G	3/8 & 1/2	
M81		18 & 20
W83E	7/16 & 1/2	
W83F	7/16 & 9/16	
W83G	1/2 & 9/16	
W83C	1/2 & 5/8	
M83		22 & 25
W85D	9/16 & 5/8	
W85E	9/16 & 3/4	
W85C	5/8 & 3/4	
M85		28 & 30
Page 71		
W90	3/16 & 1/4	
W90E	1/4 & 5/16	
M90		10 & 12
W92B	1/4 & 3/8	
W92D	5/16 & 3/8	
M92		14 & 16
W94B	5/16 & 7/16	
W94D	3/8 & 7/16	
W94F	3/8 & 1/2	
M94		18 & 20
W96A	7/16 & 1/2	
W96B	7/16 & 9/16	
W96F	1/2 & 9/16	
W96H	1/2 & 5/8	
M96		22 & 25

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 60		
W203	3/8	
W204	7/16	
W205	1/2	
W206	9/16	
W207	5/8	
W208	3/4	
W209	7/8	
W210	1	
W211	1 1/8	
W212	1 1/4	
Page 68		
W261A	1/8	
W263A	3/16	
W264A	1/4	
W265A	5/16	
W267A	3/8	
W268A	7/16	
W269A	1/2	
W270A	9/16	
W271A	5/8	
W273A	3/4	
W275A	7/8	
W276A	1	
W277A	1 1/8	
W280A	1 1/2	
Page 54		
M505		12
M507		16
M508		18

No.	Whitworth Std. Nuts; Size Bolts (Open End; Closed End; Bolt Open'g)	Metric Openings; m/m
Page 57		
W563	1/2—7/16	
W563C	1/2—9/16	
W563D	1/2—5/8	
W564	5/8—5/8	
W565	5/8—3/4	
W566	3/4—3/4	
Page 44		
W601	1/4	
W602	5/16	
M602		14
W603	3/8	
W604	7/16	
W605	1/2	
M605		22
W606	9/16	
M606		25
W607	5/8	
M607		30
W608	3/4	
M608		32
W609	7/8	
W610	1	
Page 45		
W623	3/16 & 1/4	
M623		10 & 12
W624	3/16 & 5/16	
W625	1/4 & 5/16	
W626	1/4 & 3/8	
M626		14 & 16
W627	5/16 & 3/8	
W628	5/16 & 7/16	

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

SUPERIOR DROP-FORGED WRENCHES
(Carbon Steel)

For Whitworth Standard Nuts and Metric Measure Openings

NUMERICALLY ARRANGED

*Furnished from stock on hand till supply is exhausted; thereafter on special order only.

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Page 45 Contd.		
W629	3/8 & 7/16	
M629		18 & 20
W630	3/8 & 1/2	
W631	7/16 & 1/2	
W632	7/16 & 1/2	
M632		22 & 25
W633	1/2 & 9/16	
W634	1/2 & 5/8	
W635	9/16 & 5/8	
M635		28 & 30
W636	9/16 & 3/4	
W637	5/8 & 3/4	
W638	5/8 & 7/8	
W639	3/4 & 7/8	
W640	3/4 & 1	
Pages 48 & 49		
W661B	1/8 & 1/4	
W661C	3/16 & 1/4	
W662A	3/16 & 5/16	
W662B	1/4 & 5/16	
W662C	1/4 & 3/8	
W663A	5/16 & 3/8	
W663B	5/16 & 7/16	
W663C	3/8 & 7/16	
W664A	3/8 & 1/2	
W664B	7/16 & 1/2	
W664C	7/16 & 9/16	
W665A	1/2 & 9/16	
W665B	1/2 & 5/8	
W665C	9/16 & 5/8	
W666A	9/16 & 3/4	
W666B	5/8 & 3/4	
W666C	5/8 & 7/8	
Pages 48 & 49 Contd.		
W667A	3/4 & 7/8	
W667B	3/4 & 1	
W667C	7/8 & 1	
*W668A	7/8 & 1 1/8	
*W668B	1 & 1 1/8	
*W668C	1 & 1 1/4	
Page 51		
W760A	1/8 & 1/4	
W760B	3/16 & 1/4	
W760C	3/16 & 5/16	
W761A	1/4 & 5/16	
W761B	1/4 & 3/8	
W761C	5/16 & 3/8	
W762A	5/16 & 7/16	
W762B	3/8 & 7/16	
W762C	3/8 & 1/2	
W763A	7/16 & 1/2	
W763B	7/16 & 9/16	
W763C	1/2 & 9/16	
W764A	1/2 & 5/8	
W764B	9/16 & 5/8	
W764C	9/16 & 3/4	
W765A	5/8 & 3/4	
W765B	5/8 & 7/8	
W765C	3/4 & 7/8	
Page 52		
W801	1/4	
W802	5/16	
W803	3/8	
W804	7/16	
W805	1/2	
Page 52 Contd.		
W806	9/16	
W807	5/8	
W808	3/4	
W809	7/8	
Page 61		
W901	1/4	
W902	5/16	
W903	3/8	
W904	7/16	
W905	1/2	
W906	9/16	
W907	5/8	
W908	3/4	
W909	7/8	
W910	1	
W910A	1 1/8	
W912	1 1/4	
Page 66		
W961A	1/8	
W963A	3/16	
W964A	1/4	
W965A	5/16	
W967A	3/8	
W968A	7/16	
W969A	1/2	
W970A	9/16	
W971A	5/8	
W973A	3/4	
W975A	7/8	
W976A	1	
W977A	1 1/8	
W980A	1 1/2	

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

*"SUPERRENCH"

(Chrome-Molybdenum)

For Whitworth Standard Nuts and Metric Measure Openings

NUMERICALLY ARRANGED

No.	Whitworth Std. Nuts; Size Bolts	Metric Openings; m/m
Pages 10 & 11		
W1021	1/8 & 3/16	
M1021		6 & 8
W1022	1/8 & 1/4	
W1023	3/16 & 1/4	
M1023		10 & 12
W1024	3/16 & 5/16	
W1025	1/4 & 5/16	
M1025T		12 & 13
M1025		12 & 14
W1026	1/4 & 3/8	
W1027	5/16 & 3/8	
M1027		14 & 16
M1027T		15 & 16
W1028	5/16 & 7/16	
M1028		16 & 18
W1029	3/8 & 7/16	
M1029T		18 & 19
M1029		18 & 20
W1030	3/8 & 1/2	
W1031	7/16 & 1/2	
M1031		20 & 22
M1031T		21 & 23
W1032	7/16 & 9/16	
M1032		22 & 25
W1033	1/2 & 9/16	
M1033		24 & 26
W1034	1/2 & 5/8	
M1034		23 & 27
W1035	9/16 & 5/8	
M1035		25 & 28
W1036	9/16 & 3/4	
M1036		28 & 30
W1037	5/8 & 3/4	
M1037		30 & 32
Page 14		
W1075	3/16 & 1/4	
M1075		10 & 12
W1077A	3/16 & 5/16	
W1077B	1/4 & 5/16	
W1079F	1/4 & 3/8	
W1079D	5/16 & 3/8	
W1079G	5/16 & 7/16	
M1079		14 & 16
W1081F	3/8 & 7/16	
W1081G	3/8 & 1/2	
M1081		18 & 20
W1083E	7/16 & 1/2	
W1083F	7/16 & 9/16	
W1083G	1/2 & 9/16	
W1083C	1/2 & 5/8	
M1083		22 & 25
W1085D	9/16 & 5/8	
W1085E	9/16 & 3/4	
W1085C	5/8 & 3/4	
M1085		28 & 30
Page 15		
W1090B	3/16 & 1/4	
W1090E	1/4 & 5/16	
M1090		10 & 12
W1092B	1/4 & 3/8	
W1092D	5/16 & 3/8	
M1092		14 & 16
W1094B	5/16 & 7/16	
W1094D	3/8 & 7/16	
Page 15 Contd.		
W1094F	3/8 & 1/2	
M1094		18 & 20
W1096A	7/16 & 1/2	
W1096B	7/16 & 9/16	
W1096F	1/2 & 9/16	
W1096H	1/2 & 5/8	
M1096		22 & 25
Page 12		
W1203	3/8	Can be furnished with m/m Openings
W1205	1/2	
W1207	5/8	
W1208	3/4	
W1209	7/8	
W1210	1	
Page 13		
W1903	3/8	Can be furnished with m/m Openings
W1905	1/2	
W1907	5/8	
W1908	3/4	
W1909	7/8	
W1910	1	

* REGISTERED TRADE MARK

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED WRENCHES

Arranged in Page Order

Following table indicates approximately the weights of products listed

Wrenches	Weight Each
Pages 10 & 11	
No.	Lbs.
1021	.09
1022	.12
1023	.12
1024	.18
1025	.18
1026	.26
1027	.26
1028	.43
1029	.43
1030	.43
1031	.66
1032	.65
1033	.64
1034	1.07
1035	1.04
1036	1.64
1037	1.63
1721	.09
1722	.09
1723	.09
1723A	.12
1725	.18
1726	.26
1727	.26
1728	.43
1729	.43
1731	.67
1733	1.07
1734	1.04
1735	1.65
1736	1.64
1737	1.62

Wrenches	Weight Each
Page 12	
No.	Lbs.
1203	.55
1205	.90
1207	1.40
1208	2.
1209	3.2
1210	4.3
Page 13	
No.	
1903	.59
1905	1.06
1907	1.7
1908	2.5
1909	3.5
1910	5.
Page 14	
No.	
1075	.20
1077	.27
1079	.46
1081	.72
1083	1.04
1085	1.65
Page 15	
No.	
1090	.17
1092	.24
1094	.33
1096	.38

Wrenches	Weight Each
Pages 40 & 41	
No.	Lbs.
00	.04
0	.05
1	.11
2	.19
3	.28
4	.41
5	.55
6	.76
7	.93
8	1.57
9	2.4
10	3.9
11	4.6
12	6.7
13	8.1
14	10.1
15	11.5
16	14.3
16A	14.
17	20
18	28.6
19	34.5
19A	34.
20	52.
20A	48.5
21A	95.
21B	94.
21C	85.5
22A	167.
22B	156.

Wrenches	Weight Each
Pages 40 & 41	
No.	Lbs.
700	.05
701	.10
702	.19
703	.28
704	.43
705	.55
706	.76
707	.93
708A	1.58
709	2.4
Pages 42 & 43	
No.	
721	.08
722	.11
723	.11
723A	.15
724	.18
725	.18
725B	.23
726	.30
727	.30
728	.40
729	.40
730	.61
731	.76
732	1.05
733	1.03
734	1.39
735	1.38
736	2.31
737	2.28
738	3.15
739	3.10

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED WRENCHES

ARRANGED IN PAGE ORDER

Following table indicates approximately the weights of products listed

Wrenches	Weight Each
Pages 42 & 43	
No.	Lbs.
21	.08
22	.11
23	.15
24	.18
25	.23
26	.30
27	.34
28	.40
29	.49
30	.61
31	.76
32	1.05
33	1.03
34	1.41
35	1.38
36	2.31
37	2.28
38	3.15
39	3.06
40	3.7
41	3.5
42	5.5
43	5.5
44	7.8
45	7.7
46	9.5
47	9.5
48	13.
49	12.7
50	13.2
51	14.7
52	16.7
53	18.1
54	24.
55	24.
56	31.
57	34.
57A	38.7
58	45.
59	42.5
60	48.
61	66.
62	66.5
63	95.
64	113.5

Wrenches	Weight Each
Page 44	
No.	Lbs.
601	.07
602	.11
603	.16
604	.19
605	.31
606	.41
607	.60
608	1.09
609	1.72
610	2.5
Page 45	
No.	
623	.13
624	.13
625	.12
626	.21
627	.19
628	.17
629	.37
630	.36
631	.35
632	.57
633	.56
634	.54
635	1.10
636	1.04
637	1.02
638	2.1
639	1.9
640	1.8
Page 46	
No.	
103	.23
104	.32
105	.50
106	.64
107	.81
108	1.28
109	1.89
110	2.7
111	3.7
112	4.9
113	6.5

Wrenches	Weight Each
Page 47	
No.	Lbs.
126	.22
127	.23
128	.29
129	.32
130	.49
131	.53
132	.65
133	.78
134	.92
135	.97
136	1.38
137	1.37
138	2.
139	2.
140	2.6
141	3.
142	3.6
143	4.3
144	5.6
145	5.5
Pages 48 & 49	
No.	
661	.17
662	.30
663	.48
664	.94
665	1.35
666	2.1
667	3.4
668	5.4
Page 50	
No.	
75	.20
77	.27
79	.46
81	.72
83	1.04
85	1.65

Wrenches	Weight Each
Page 51	
No.	Lbs.
760	.17
761	.29
762	.55
763	.75
764	1.21
765	1.84
Page 52	
No.	
800	.06
801	.11
802	.17
803	.25
804	.35
805	.38
806	.51
807	.87
808	1.36
809	1.75
810	2.8
811	3.
812	4.2
813	5.6
814	7.2
815	8.8
816	10.5
817	14.3
818	17.2
819	24.2
820	41.5

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED WRENCHES

Arranged in Page Order

Following table indicates approximately the weights of products listed

Wrenches	Weight Each
Page 53	
No.	Lbs.
580	.04
581	.08
582	.11
583	.14
584	.21
585	.29
586	.35
587	.54
588	.68
589	1.12
590	1.49
Page 54	
No.	
500	.04
501	.09
502	.22
503	.29
504	.44
505	.54
506	.72
507	.89
508	1.25
509	1.5
510	2.1
511	2.5
Page 55	
No.	
528	.06
524-5	.13
526-7	.20
528-9	.34
530-1	.53
532-3	.71

Wrenches	Weight Each
Page 55 Contd.	
No.	Lbs.
534-5	1.01
536-7	1.51
538-9	1.84
540-1	2.4
542-3	3.6
Pages 56 & 57	
No.	
554	.41
555	.53
556	.76
557	.97
562	.59
563	.80
564	.90
565	1.09
566	1.53
567	2.2
568	3.2
Page 58	
No.	
595	.71
596	1.10
597	1.35
598	1.68
Page 59	
No.	
367	1.5
370	2.6
371-3	3.5
374-6	4.1
377-9	4.8
380-2	5.4
383-5	6.
387-9	8.5

Wrenches	Weight Each
Page 60	
No.	Lbs.
201-2	.34
203-4	.55
205-6	.90
207	1.40
208	2.
209	3.2
210	4.3
211-12	6.2
Page 61	
No.	
901-2	.28
903-4	.59
905-6	1.10
907	1.70
908	2.5
909	3.5
910	5.
911-12	7.
Page 62	
No.	
418	.14
420	.16
422	.20
424	.27
426	.31
428	.40
430	.50
432	.52
434	.64
436	.76
438	.80
440	1.01
442	1.08
Page 63	
No.	
471	.25
472	.48
474	.93

Wrenches	Weight Each
Page 63 Contd.	
No	Lbs.
482	.41
483	.76
484	1.12
Page 64	
No.	
403	.13
404	.26
405	.34
406	.50
407	.72
408	1.
409	1.22
410	1.38
412	2.7
491	.17
493	.21
494	.23
495	.25
496	.24
497	.25
498	.25
Page 65	
No.	
452	.10
453	.09
454	.14
455	.16
456	.21
457	.27
458	.31
459	.35
460	.48
461	.51
462	.56
463	.66
464	.76
466	1.33
468	1.90

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED TOOLS

ARRANGED IN PAGE ORDER

Following table indicates approximately the weights of products listed

Wrenches	Weight Each
Pages 66 & 67	
No.	Lbs.
960	.06
961	.12
962	.21
963	.28
964	.31
965	.45
966	.60
967	.83
968	1.05
969	1.26
970	1.62
971	1.85
973	2.9
974	3.5
975	4.
976	4.7
977	6.72
978	6.8
979	8.7
980	11.
Pages 68 & 69	
No.	
260	.04
261	.05
262	.15
263	.17
264	.20
265	.32
266	.44
267	.63
268	.75
269	1.02
270	1.32
271	1.67
273	2.7
274	3.2
275	3.9
276	4.8
277	6.1
278	6.9
279	10.
280	12.5
Page 70	
No.	
993	.51
994	1.25
996	.25

Wrenches	Weight Each
Page 71	
No.	Lbs.
90	.18
92	.26
94	.37
96	.53
Tool Holders Page 118	
No.	
A-00-S	.43
A-0-S	.69
A-1-S	1.05
A-2-S	2.1
A-3-S	3.3
A-4-S	4.7
A-5-S	7.2
Page 119	
No.	
A-00R& L	.46
A-0R & L	.73
A-1R & L	1.33
A-2R & L	2.5
A-3R & L	3.4
A-4R & L	4.9
A-5R & L	7.8
Page 120	
No.	
0200-S	.57
200-S	1.6
201-S	2.
202-S	3.2
204-S	6.
Page 121	
No.	
0200R & L	.59
200R & L	1.06
201R & L	2.
202R & L	3.2
204R & L	6.

Tool Holders	Weight Each
Page 122	
No.	Lbs.
00-S	.38
0-S	.75
1-S	1.37
2-S	2.3
3-S	3.5
4-S	4.8
5-S	7.5
6-S	12.2
Page 123	
No.	
00R & L	.46
0R & L	.81
1R & L	1.56
2R & L	2.5
3R & L	4.
4R & L	5.3
5R & L	9.
6R & L	13.1
Page 124	
No.	
020-R	.42
20-R	.74
21-R	1.39
22-R	2.1
23-R	3.4
24-R	4.4
25-R	4.6
Page 125	
No.	
030R & L	.46
30R & L	.80
31R & L	1.44
32R & L	2.3
33R & L	3.7
34R & L	4.9
35R & L	5.

Tool Holders	Weight Each
Page 126	
No.	Lbs.
91	2.1
92	3.4
93	6.
94	12.
95	20.6
96	35.
97	57.
Page 127	
No.	
50	1.
51	1.6
52	2.7
Page 128	
No.	
11K	1.87
Page 129	
No.	
2	14.7
3	23.8
4	39.
5	69.
Page 130	
No.	
080	1.3
80	2.2
81	3.1
82	6.7
83	10.3
Page 136	
No.	
101	1.37
102	2.3
103	4.
105	8.8
106	12.7
108	30.25

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED TOOLS

ARRANGED IN PAGE ORDER

Following table indicates approximately the weights of products listed

Tool Holders	Weight Each
Page 138	
No.	Lbs.
185	2.87
185B	3.25
186	5.31
Page 140	
No.	
128	68.
148	73.5
168	47.25
Tool Posts, Page 141	
No.	
5	.44
10	.81
20	2.06
23	1.63
28	2.12
30	3.
40	4.69
50	6.63
60	13.63
Tool Post Wedges, Page 141	
No.	
5	.06
10	.13
11	.09
15	.16
18	.18
20	.22
30	.25
40	.44
60	.63
65	.75

Tool Post Rings	Weight Each
Page 141	
No.	Lbs.
5	.25
10	.5
11	.5
14	.75
18	1.25
20	.94
30	1.25
40	1.75
60	2.18
Dogs Page 142	
No.	
1	.32
2	.56
3	.97
4	1.47
5	1.88
6	2.6
7	3.3
8	4.1
9	5.4
10	7.
11	10.
12	11.
13	20.
Dogs Page 143	
No.	
112	15.
113	21.5
114	30.7

Dogs	Weight Each
Page 144	
No.	Lbs.
21	.13
22	.25
23	.47
24	.72
25	1.07
26	1.62
27	2.
28	2.7
29	3.2
30	6.
31	8.5
32	9.7
33	17.2
Dogs Page 145	
No.	
132	12.3
133	18.5
134	28.
Dogs Page 146	
No.	
61	.53
62	.98
63	1.76
64	3.
Dogs Page 147	
No.	
42	.72
43	.83
44	1.07
45	1.21
46	1.57
47	1.67
48	2.1

Clamps	Weight Each
Page 148	
No.	Lbs.
0	.25
1	.75
1 1/2	1.56
2	3.1
3	6.5
4	9.7
5	12.1
6	17.
8	24.
10 1/2	28.
12 1/2	40.
Clamps Page 149	
No.	
104	4.3
106	5.6
108	6.
110	7.6
112	9.5
115	13.5
118	17.
Clamps Page 150	
No.	
402	.82
403	1.7
404	2.2
406	3.2
408	5.5
410	8.2
412	7.5

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS OF STANDARD DROP-FORGED TOOLS

Arranged in Page Order

Following table indicates approximately the weights of products listed

Clamps	Weight Each
Page 151	
No.	Lbs.
201	.25
202	.33
203	.56
204	.90
Pages 152 & 153	
No.	
54	1.
56	1.84
58	3.8
59	6.6
54A	1.07
56A	2.
58A	3.9
59A	7.1
74	1.02
76	2.
78	4.2
30	.37
35	.62
40	.87
44	.83
46	1.62
48	3.3
64	1.
66	2.
68	4.
Page 154	
No.	
301	.59
302	1.37
303	1.92
304	3.1

Thumb Nut Blanks "A"	Weight Per 100
Page 155	
Size	Lbs.
1/8	.62
3/16	1.31
1/4	2.3
5/16	4.
3/8	6.2
7/16	9.1
1/2	12.7
9/16	16.2
5/8	22.5
3/4	37.
Thumb Nut Blanks "B" Page 155	
Size	
1/8	.94
3/16	1.62
1/4	2.8
5/16	4.2
3/8	6.8
7/16	9.5
1/2	13.7
9/16	15.3
5/8	21.8
3/4	38.

Thumb Screw Blanks "C"	Weight Per 100
Page 157	
Size	Lbs.
1/8 x 1	.94
1/8 x 2	1.25
1/8 x 3	1.56
1/8 x 4	2.1
3/16 x 1	2.1
3/16 x 2	3.4
3/16 x 3	4.3
3/16 x 4	5.6
1/4 x 1	4.
1/4 x 2	5.3
1/4 x 3	7.8
1/4 x 4	8.7
5/16 x 1	6.2
5/16 x 2	7.8
5/16 x 3	10.6
5/16 x 4	13.7
3/8 x 1	10.
3/8 x 2	12.5
3/8 x 3	16.
3/8 x 4	19.3
7/16 x 1	13.7
7/16 x 2	16.5
7/16 x 3	21.2
7/16 x 4	26.2
1/2 x 1	16.2
1/2 x 2	21.2
1/2 x 3	27.
1/2 x 4	32.5
9/16 x 1	21.
9/16 x 2	27.5
9/16 x 3	35.3
9/16 x 4	42.8
5/8 x 1	26.8
5/8 x 2	34.3
5/8 x 3	46.5
5/8 x 4	54.6
3/4 x 1	38.7
3/4 x 2	53.1
3/4 x 3	66.
3/4 x 4	78.7

Eye Bolts	Weight Each
Pages 158 & 159	
No.	Lbs.
3	.10
4	.27
5	.37
6	.50
7	.68
8	1.05
9	1.48
10	2.1
11	3.
12	4.2
14	6.8
15	10.9
16	19.7
17	27.
21	.05
22	.10
23	.17
24	.22
25	.33
26	.43
27	.60
28	.96
29	1.35
30	2.
31	2.8
32	3.6
34	6.
35	9.2
36	13.7
Swivels Page 161	
No.	
4	.5
5	.75
6	1.25
7	1.56
8	2.5
9	4.
104	.5
106	1.
107	1.5
108	2.25

WILLIAMS
SUPERIOR DROP-FORGED TOOLS

WEIGHTS
OF STANDARD DROP-FORGED TOOLS

ARRANGED IN PAGE ORDER

Following table indicates approximately the weights of products listed

Hoist Hooks	Weight Each
Pages 162 & 163	
No.	Lbs.
2	.54
3	.69
4	.97
5	1.44
6	2.2
7	3.9
8	4.2
9	6.2
10	8.2
11	10.5
12	14.
13	18.
14	27.2
15	44.
15A	44.
16	71.
16A	71.
22	.54
23	.82
24	.97
25	1.5
26	2.2
27	3.1
28	4.4
29	6.
30	7.8
31	10.
32	13.6
33	19.
34	29.5
35	45.
36	81.
36A	81.
Rope Sockets Page 164	
No.	
2	.38
3	.38
4	.63

Rope Sockets	Weight Each
Page 164 Contd.	
No.	Lbs.
5	.63
6	1.19
7	1.19
8	1.66
9	2.3
10	4.
11	7.2
12	7.2
13	12.3
14	12.3
15	17.1
16	17.1
Rope Sockets Page 165	
No.	
102	.36
103	.36
104	1.31
105	1.31
106	2.3
107	2.3
108	3.
109	3.9
110	7.1
111	14.
112	14.
113	20.6
114	20.6
115	30.4
116	30.4
Caliper Gauge Page 166	
No.	
22	.94
24	1.19
26	1.57

Caliper Gauge	Weight Each
Page 166 Contd.	
No.	Lbs.
28	2.
30	2.
32	2.2
34	3.2
36	4.2
Caliper Gauge Page 167	
No.	
2	.06
4	.08
6	.12
8	.21
10	.29
12	.44
14	.59
16	.84
18	1.17
20	1.81
Caliper Gauge Page 168	
No.	
110	.24
112	.37
114	.53
116	.80
118	1.17
120	1.77
Machine Handles Page 169	
No.	
00	.06
0	.09
1	.13
2	.22

Machine Handles	Weight Each
Page 169 Contd.	
No.	Lbs.
3	.31
4	.37
5	.62
6	1.25
7	1.68
11	.22
13	.43
15	.75
16	1.06
Balance Handles Page 170	
No.	
512	.25
516	.56
520	.75
522	1.12
525	1.25
529	1.62
434	2.25
439	2.75
Crank Handles Page 171	
No.	
00	.38
0	.43
1	.78
2	.75
4	.99
6	1.12
8	1.24
10	1.57
12	2.4
14	2.5
16	3.2

WILLIAMS
SUPERIOR DROP-FORGINGS

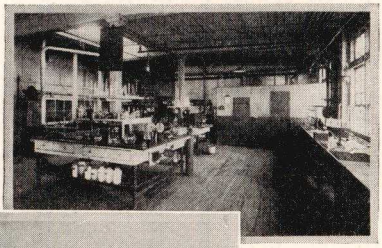
SPECIAL DROP-FORGINGS TO ORDER

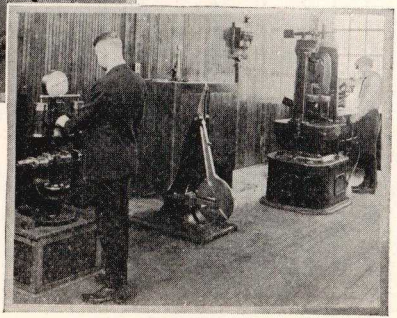
Drop-forgings are used in vast quantities for a wide variety of mechanical purposes. They are made of aluminum, bronze, copper, iron and steel.

Their quality depends upon the material of which they are made and the care and skill used in their manufacture. Our Chemical Laboratories check all material as received; our Physical Laboratories test forgings while in process and upon completion; our skill has been developed by nearly half a century's experience.

MATERIAL

The material usually employed in making drop-forgings is bar steel. By carrying thousands of tons of assorted grades, shapes and sizes, many orders for special forgings can be completed without waiting to obtain the material. This is often a great convenience to our customers, particularly in the case of new dies, where the correct size of metal required cannot always be definitely determined until the tools are completed and tried.

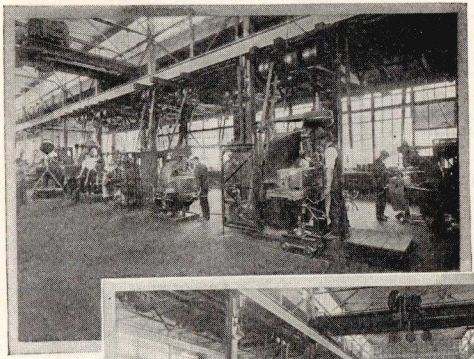


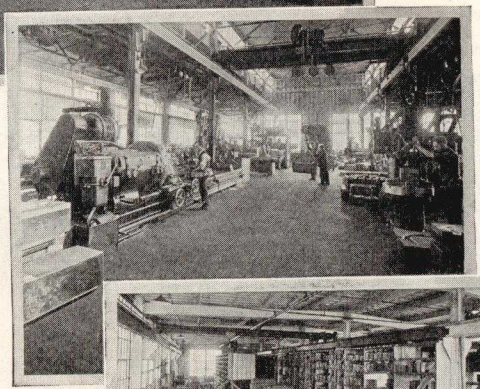


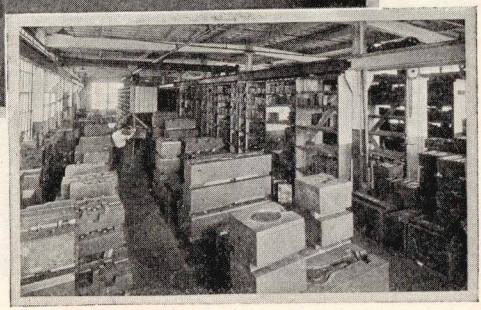
WILLIAMS
SUPERIOR DROP-FORGINGS

DIES

Our facilities for sinking drop-forging dies, from the smallest, weighing only a few pounds, to massive blocks of several tons weight each, are unexcelled. Charges, when made for the use of dies, include but a portion of their cost and do not convey the right of removal from our works; we cannot sell or part with the tools. We assume the risk and expense of their breakage and maintenance; the customer controls their use, as we will not make forgings from them without his written authority







WILLIAMS
SUPERIOR DROP-FORGINGS

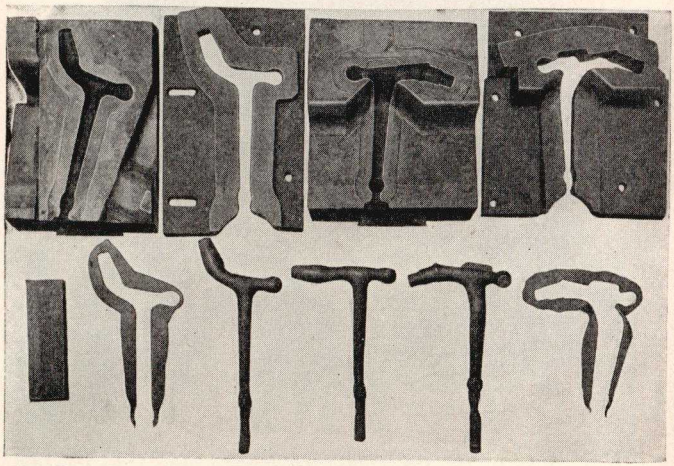
ESTIMATES

Dies are made to conform to a drawing; they usually differ from the finished part by the addition of the stock for removal in finishing and by the necessary draft, or taper, to permit drawing the forgings from them. Draft is seldom less than seven degrees—frequently it is more. Before sinking dies, we always submit to the customer, for approval a blue print showing the addition of the stock to be removed in finishing and the draft, with such other modifications as may be necessary.

When estimates are desired, therefore, send us a model, or drawing, of the part and state whether it shows "forging size" or "finished size", the quantity of forgings wanted and the material of which they are to be made. If the model, or drawing, shows "finished size," tell us what surfaces are to be finished. We usually add at least 1/32 inch on each surface to be machined. On large forgings, such as crankshafts, we add 1/16 to 1/8 inch; on small pieces, requiring only grinding or polishing, 1/100 inch is allowed.

We can often save customers expense if informed of the use for which the forgings are intended. The price is largely affected by the quantity made with one setting of the tools; it costs as much to set dies for 100 as for 1000 pieces, and the forging work is also more costly per unit in small lots. Prices for special drop-forgings are made per piece, not per pound, and vary with the nature of the work, the material used and the quantity taken at one time.

Drop-forgings sometimes require the use of several sets of tools; the "break-down" and "finishing" dies and trimmers, together with the length of bar steel, and the various stages of manufacture of such a part, are shown below.

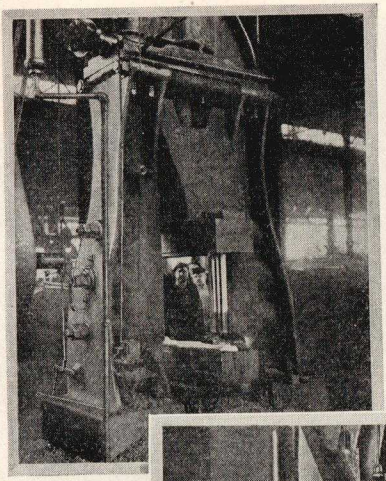


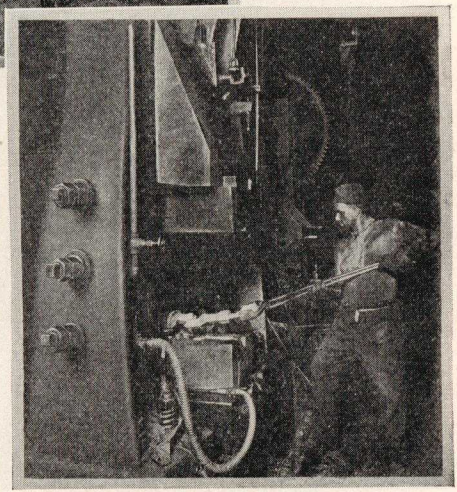
WILLIAMS
SUPERIOR DROP-FORGINGS

EQUIPMENT

Our forging equipment consists of Board Drops from 300 to 3,000 lbs., Steam Drops from 2,500 to 12,000 lbs., Steam Hammers, Trip Hammers, Upsetting

(*Continued on next page*)

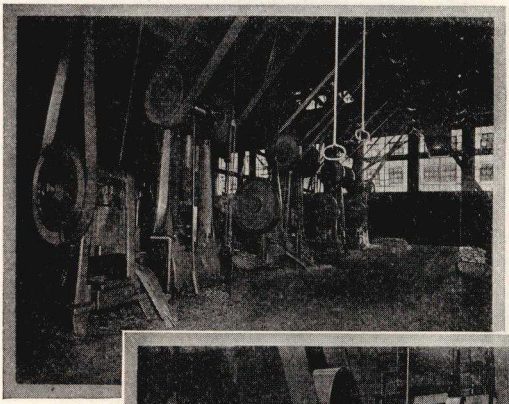


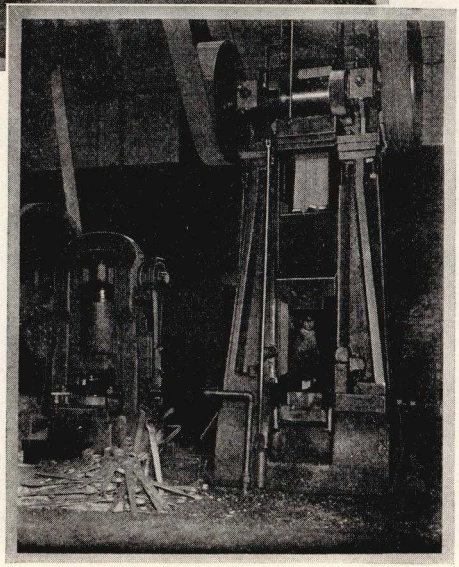


WILLIAMS
SUPERIOR DROP-FORGINGS

EQUIPMENT (Continued)

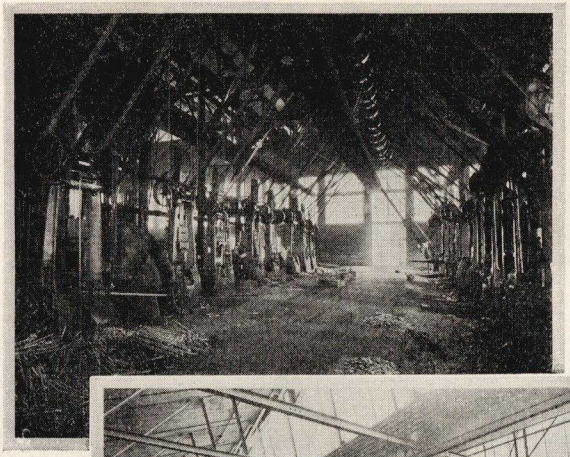
Machines (sometimes called "Headers"), Bulldozers, Hydraulic Presses, Electric Welding Machines, Rolls, Shears, Hot and Cold Sawing Machines, Sand-blasting Machines, etc., etc





EQUIPMENT (Continued)

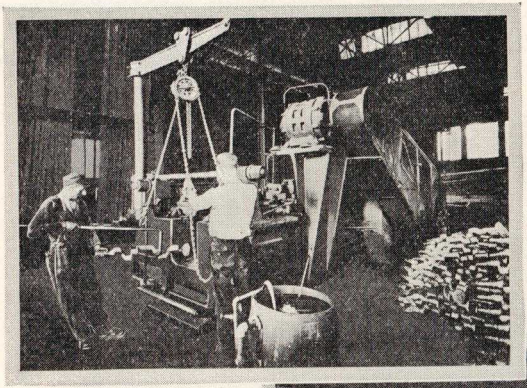
On the preceding page and below are shown batteries of Board Drops, also a "close-up" of a 3000 lbs. Hammer of this type. Many of these Board Drops are provided with trimming Presses for removing, while the part is still hot, the surplus metal, or "flash," which flows out between the dies during the forging process. These "hot" Presses are also used to cut the forging from the end of the bar of metal from which it has been made. Where the size and shape of the piece are such that this trimming operation can be performed after the forging has cooled, "cold" Presses are used. A battery of these machines is illustrated below.

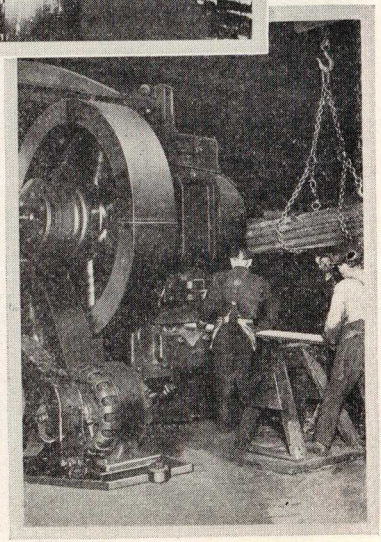


WILLIAMS
SUPERIOR DROP-FORGINGS

EQUIPMENT (Continued)

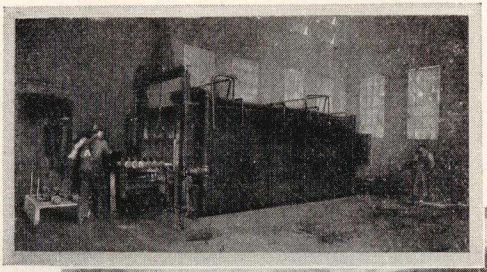
Our upsetters are of sizes suitable for stock up to 6 inches diameter; our Shears cut steel bars, cold, 5 inches square.

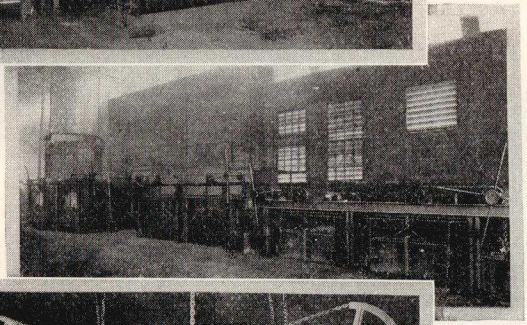


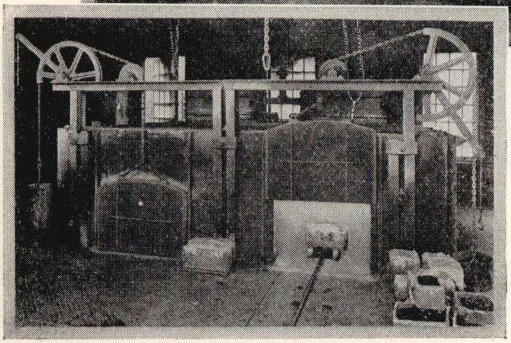


HEAT TREATMENT

Our Annealing, Case-hardening and Heat-treating facilities are complete and of the most modern type. The equipment includes recording pyrometers, as well as oil-burning, automatic furnaces for treating axles, crankshafts and other large parts. The methods and processes employed are all specified and controlled by our Metallurgical Department, directed by a highly trained technical staff.



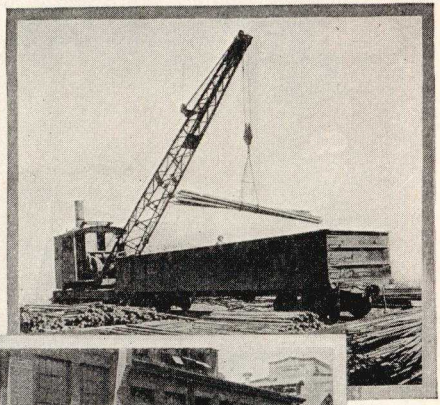


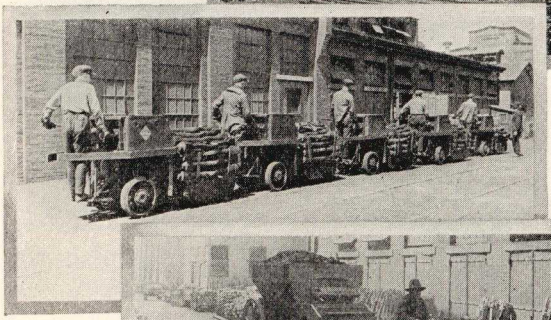


WILLIAMS
SUPERIOR DROP-FORGINGS

SHOP TRANSPORTATION

Many modern conveniences to aid in the economical movement of forgings during the process of manufacture are employed. These include locomotive crane for switching cars and handling steel, gasoline tractor (shown hauling ashes to fill in depressions in yard surface), electric lift-trucks, in addition to hand lift-trucks, traveling cranes, etc., etc.





INSPECTION

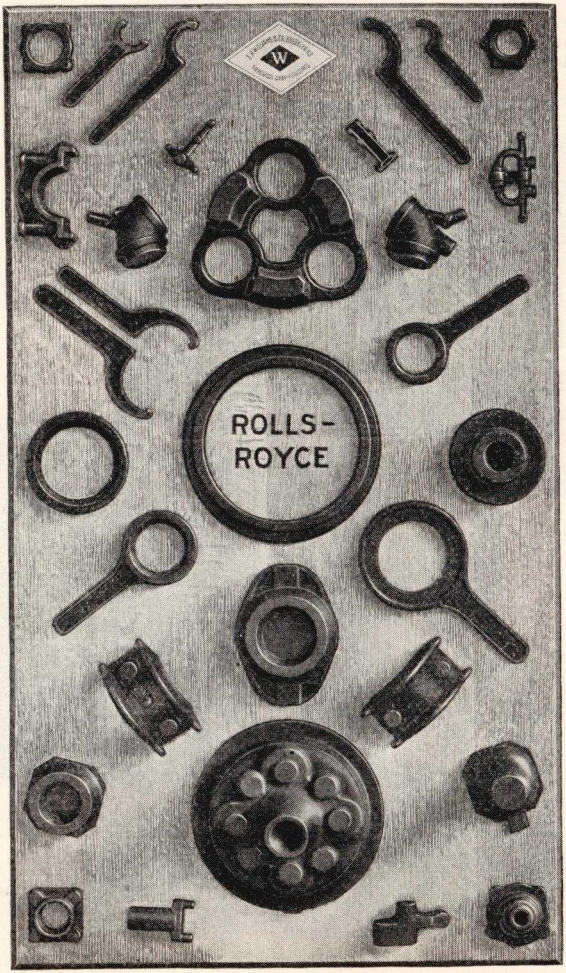
All of our product is carefully inspected by experienced men employed only on this work and every precaution is taken to insure none but perfect forgings leaving our plant.

GUARANTEE

We guarantee all forgings to be free from imperfections of workmanship and material. We will gladly replace, without charge, any which prove defective, but we cannot allow claims for labor, or damages.

WILLIAMS
SUPERIOR DROP-FORGINGS

Illustrations of Drop-forgings made to order; not for sale from stock



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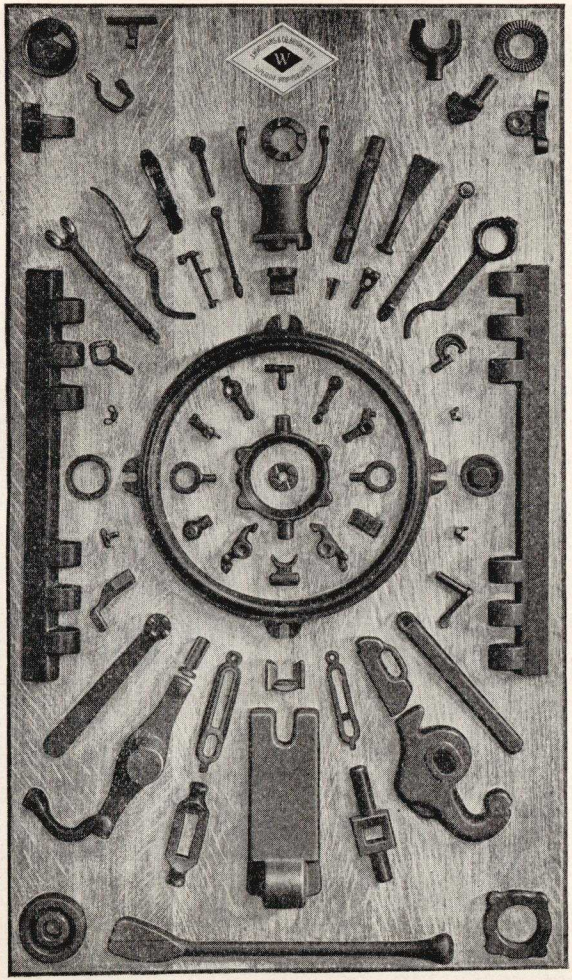

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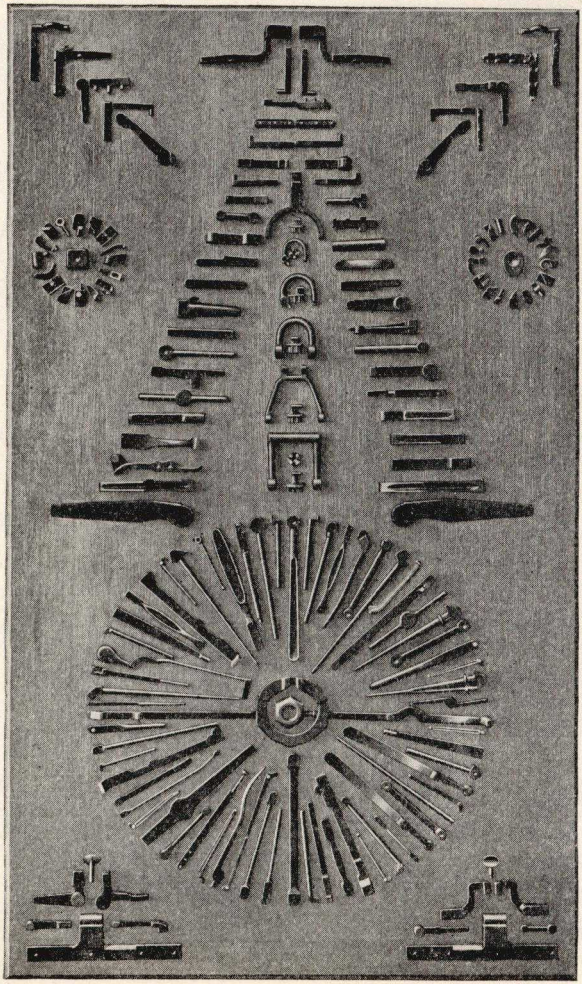

WILLIAMS

SUPERIOR DROP-FORGINGS

SUPERIOR DROP-FORGED TOOLS

TWENTIETH EDITION

J·H·WILLIAMS & CO·